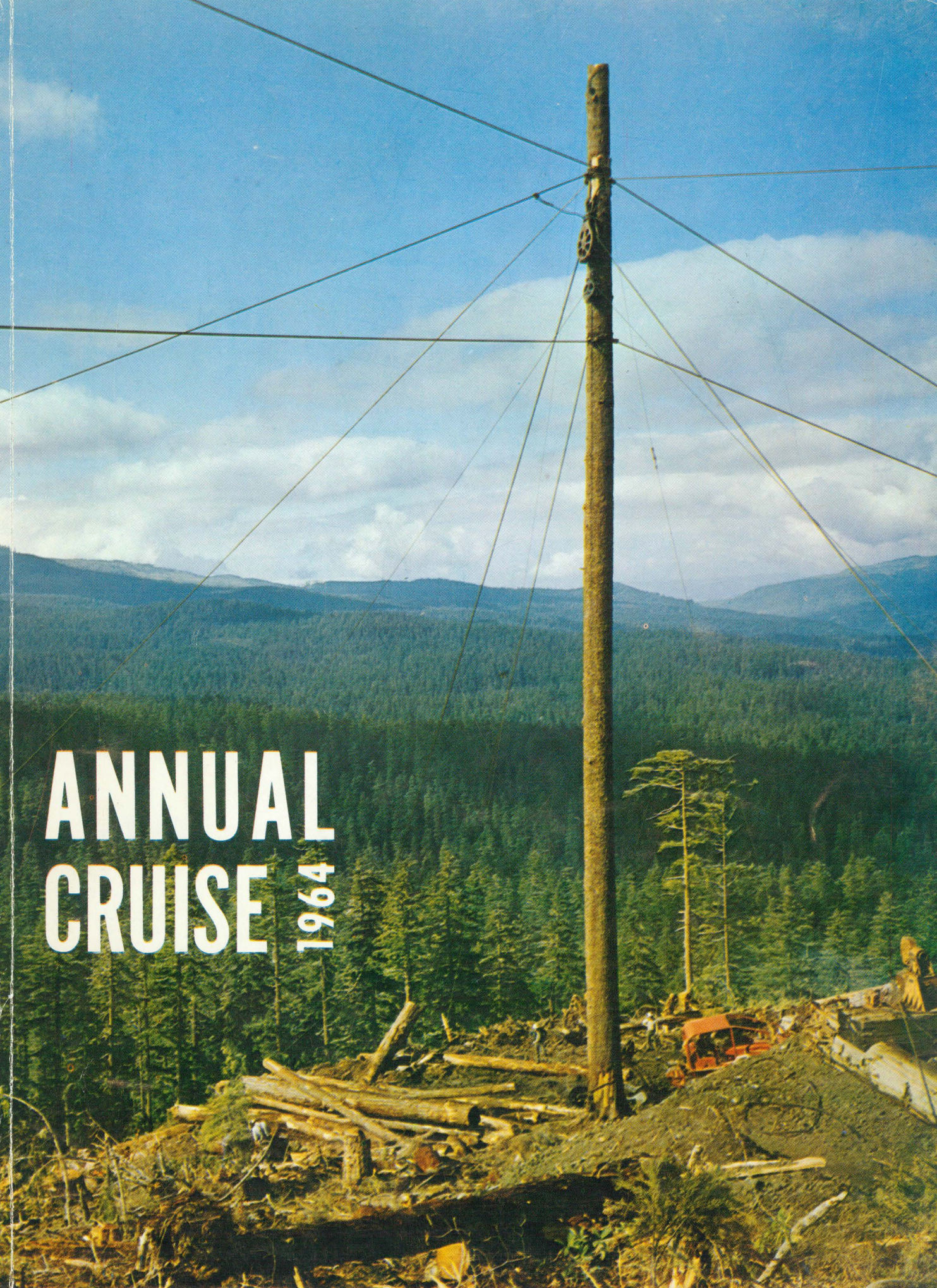
ANNUAL
CRUISE
1964

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ANNUAL CRUISE

Published Annually By The

Forestry Club

OREGON STATE UNIVERSITY
Corvallis, Oregon

Editor's Note

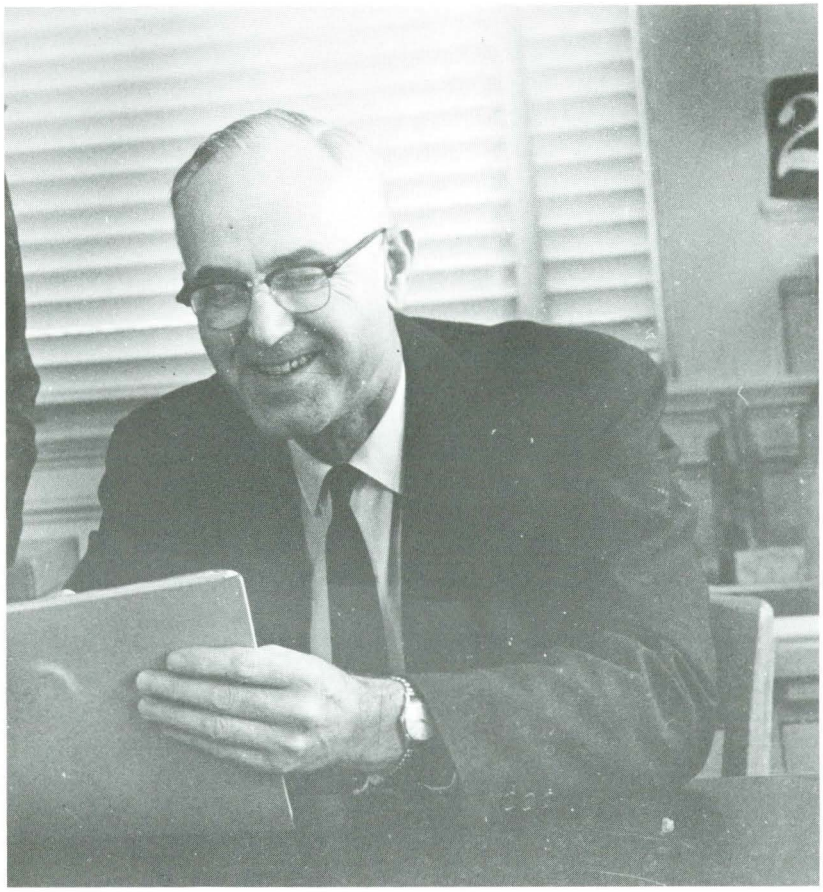
The staff of the 1964 ANNUAL CRUISE has made numerous changes in an attempt to professionalize this year's publication. One of the more obvious changes is the transfer of the Alumni Directory to a separate booklet for convenient reference. Greater emphasis has been placed on more articles by industry, faculty, and students. We hope these and other changes have made this ANNUAL CRUISE more informative and enjoyable.

I would like to take this opportunity to thank all the people who made this publication possible. Among those are the School of Forestry office staff, the faculty, the advertisers, the U.S. Forest Service, the Bureau of Land Management, and those who contribute articles to this publication.

A special thanks goes to Dan Robinson who has been our faculty advisor this past year.

Finally, I would like to thank the Cruise staff for the hard work and cooperation rendered on this year's ANNUAL CRUISE.

Cliff Perigo
Editor



Dean W. F. McCulloch

Mac's Message

The changing times require a changed approach to professional forestry education. On a number of occasions I have quoted from the O.A.C. catalog of 1905-1906 a partial description of the forestry curriculum then in effect – our first four-year program. Students at that time were required to have an actual working knowledge of: "packs and packing, trail and road making, camp equipage, camp making, camp fires, water supplies, camp cooking, woodsmen's tools, their use and abuse, use and care of fire arms, dressing and preserving game, care of skins, furs, hides, and pelts."

Summer camps 8 weeks long were held in the hills west of town, students going part way there by train. (Those were the days). In the camps some of the instruction was given in campfire talks covering such things as "methods of field work; pack animals, selection, care and management; fish and game, hunting, trapping, fishing, etc." George Peavy was a consummate master of the campfire system of instruction.

Forestry courses on campus included some with titles similar to those of today, but there was a vast difference in content. Also of interest in the first curriculum: Club-work I, requiring two Friday evenings per month for discussion of forestry affairs; Club-work II, required of juniors, one Thursday evening a month on photography; and Club-work III, required of seniors, one Friday evening a month on "rod and gun club work."

Those were less complex days and an uncomplicated curriculum fulfilled the needs of foresters. Not so today. The complexity of industry, society, and technology, now make it much more difficult to do justice to students, to arm them adequately for all the intricate and competitive situations which they must face after graduation.

The Society of American Foresters has just published "Forestry Education in America" by Dean Emeritus Samuel T. Dana of the University of Michigan, and Professor Evert Johnson of Auburn University. The study covered several years and enlisted the help of many foresters. One of the most important conclusions is cited: "To meet tomorrow's needs, increasingly effective professional preparation will require strengthening of current educational pro-

grams in both breadth and depth. Future graduates must be even better grounded in principles of forestry and its underlying arts and sciences and must have understanding of the world around them. The needed education can not normally be covered adequately in less than five academic years of college work." Such a complex problem cannot be stated as simply as in the brief extract quoted here, and I hope this does not do the authors an injustice by leaving out the pages of supporting context.

The School agrees that the greater demands being made on foresters today require a better education than ever before. The problem is to decide the most effective way of improving education. One method is the five-year bachelor's degree program as suggested by Dana and Johnson. Another possibility may be the intensification of effort within the present 4-year pattern.

Currently it is possible for many men to return to the campus for additional study after the bachelor's degree. Last year there were 1989 seniors, and 1106 graduate students in forestry. So a substantial number of men are already taking one or more years of added work suited to their individual preferences. They would not have such free choice in a prescribed fifth year of undergraduate work. Furthermore, there is nothing magical about the fifth year – many desirable areas of knowledge would still be left untouched at the end of five years, or six, or seven. There is just no end to possibilities in stretching out the formal, required curriculum.

An alternative approach to a better forestry education may be found in a double-barreled attack. The first, a staff effort, is the rigorous pruning of all deadwood accumulated in curricula through tradition, inertia, the moldy pet courses of professors and deans, local expediencies, and simular indefensible reasons. It should be possible to substitute for this excess baggage at least some of the desirable foundation arts and sciences proposed by Dana and Johnson.

Second is a joint student-staff effort, in which the student would accept a greater responsibility for his own learning, acquiring processes of educating himself adequately throughout life. It is perhaps trite to say that he should be enabled to learn how to learn while on the campus, and that he should also be motivated to do it. But this is true; it is also difficult to achieve. It imposes a greater task on staff members, because developing personal motivation is much more difficult than lecturing on a technical subject.

Inappropriate or inaccurate examining devices, or student misunderstanding or improper responding, may all produce a false impression of student ability in a given course. We may be led to think that he has mastered the subject when he has not. However, the thoughtful student himself often recognizes his own weaknesses. It is hoped that, given the encouragement and the facilities, such a student will honestly try to remedy his own deficiencies. If we make it possible, he can at least partially teach himself, complementing the classroom teaching of the staff.

To this end the School has established a self-learning center, with the generous support of the Hill Family Foundation. It is patterned after pioneering effort in this field by Dr. R.R. Reichart of the School of Education at OSU. The beginning is modest but the hopes are great. Eventually it will be possible for students to become equally as skilled in using educational techniques as in using forestry techniques. Staff and students working together will be able to generate a greater total competence in the methods of education. Only then will students develop the versatility and initiative which are essential foundations for an effective personal and professional life. We are determined to succeed in this effort so that four-year students will be both able and eager to continue, and to extend, their education.

Apparently belying the above statement we do have one five-year curriculum now in forest engineering. However, this has a highly specialized purpose, adding a background of civil engineering to our basic program. The purpose is to aid students who look toward certification as registered professional engineers. Similarly, the combined FE-FM curriculum generally requires five years, but it also provides two degrees, and does not comply with the Dana-Johnson proposal.

The forest products curriculum was compressed into a basic core several years ago, allowing substantial elective time for education in related areas such as business and science. This gives opportunity to fulfill a wide range of individual objectives. In recent years a number of products students have used this approach to obtain two bachelor's degrees. This program also recognizes the diversity of career opportunities and the impracticability of trying to establish a specific curriculum for each.

In forest management the basic courses essential to membership in the SAF have been maintained, though the total forestry content has been reduced. Emphasis has been given to three areas. Increased economics and business courses now appear in the basic management curriculum. A forest science option is available for those interested in research. In the planning stage, with the aid of outside advisors, is a forest recreation option.

No curriculum is ever considered final. The staff has given a good deal of time and effort to adapting curricula to the changing times, as illustrated above. We will continue to refine the teaching process to the best of our abilities. The "Improvement of Instruction" project, supported by the Hill Family Foundation, is a very great help in this direction.

We hope to maintain a program adequate for the needs of forestry through the above mentioned effort to encourage student self-education; through constant adaptation of teaching methods and information to the needs of forestry; and through continuing effort to liberalize professional education. If we do these things well enough we should achieve some of the desirable objectives indicated by Dana and Johnson without going to a mandatory five-year curriculum, at least for some years to come.

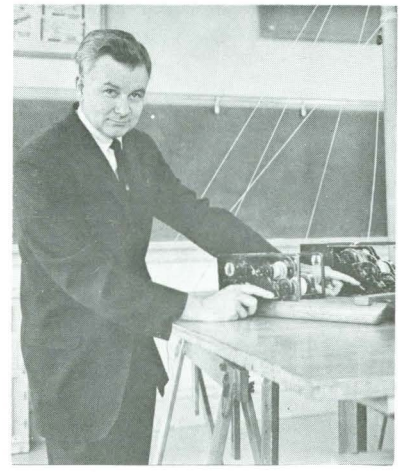
– W.F. McCulloch

STAFF

Forest Engineering

WILLIAM A. DAVIES
Head, Forest Engineering Dept.

Bill graduated from the University of Washington in 1938 and received his M.F. degree in 1946. Bill worked in logging, surveying, timber sales, and fire control before and after his college days. He came to OSU in 1946 and is presently teaching senior and graduate engineering courses. Bill also manages the McDonald and Paul Dunn Forests.



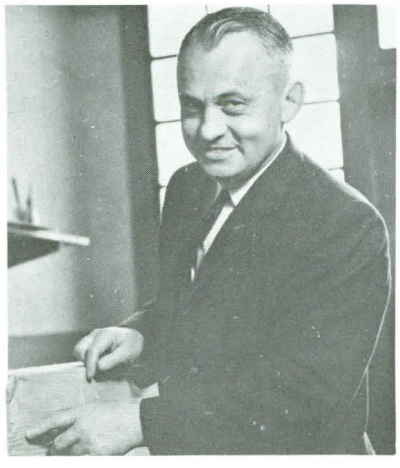
JOHN E. O'LEARY

John graduated from Univ. of Mich. in 1942, and received his M.F. in 1947 at OSU. He worked as a logging engineer in private industry before coming to OSU in 1949. John studied logging and engineering problems in Europe in 1955 and 1956 under a Fulbright award. His courses include logging methods, forest engineering and senior seminar. John is widely known for his studies in aerial logging methods.

ROBERT L. WILSON

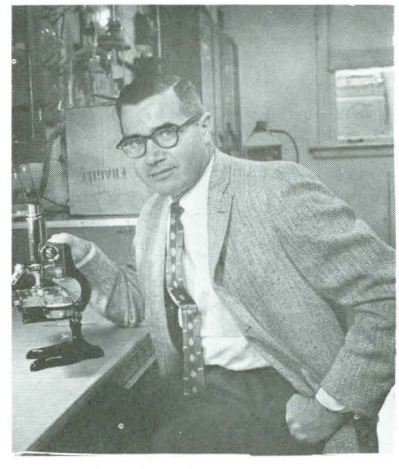
Bob came to OSU in 1952 after receiving his B.S. from the University of Iowa in 1942 and his M.F. from Colorado A & M in 1947. He is presently instructing courses in surveying and logging roads. Bob's special interests include dachshunds, coin collecting, and skiing.

Forest Products



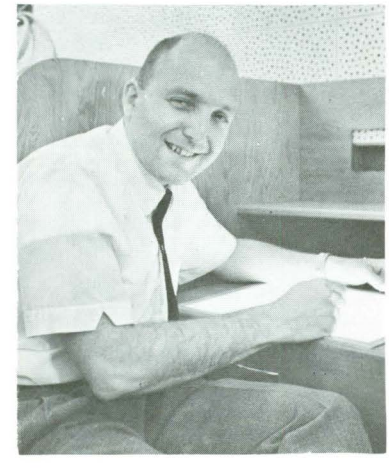
WILLIAM I. WEST
Head, Forest Products Dept.

Bill graduated with a B.S.F. from Univ. of Washington in 1939 and received his M.F. from the same school in 1941. Before coming to O.S.U. in 1946, he worked with the U.S.F.S. and private industry. He now teaches manufacturing, merchandising, preservation and seminars.



MILFORD D. Mc KIMMY

Mac received his B.S. in 1949 from Mich, State, his M.F. in 1951 from O.S.U., and his Ph.D. in 1955 from New York State College of Forestry. He joined the faculty here in 1953 and teaches courses in timber mechanics, wood properties, wood utilization, wood seasoning, and wood preservation. Mac has also done considerable research work for federal, state and private industry.



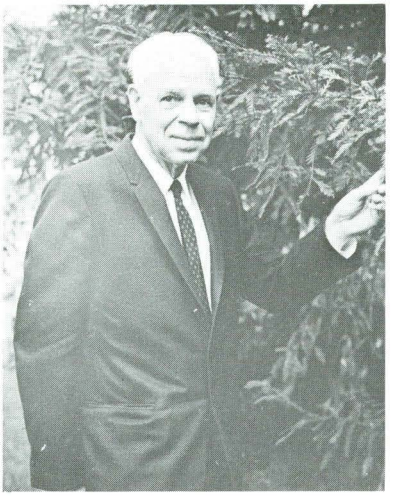
ANTONE C. VANVLIET

Tony received his B.S. at O.S.U. in 1952 and started teaching in 1955. He received his M.S. in 1958. He has taught courses in wood technology, wood utilization, photomicrography, and microtechnique. Special interests include—photomicrography, commercial art, sports, gardening, and resting.

Forest Management

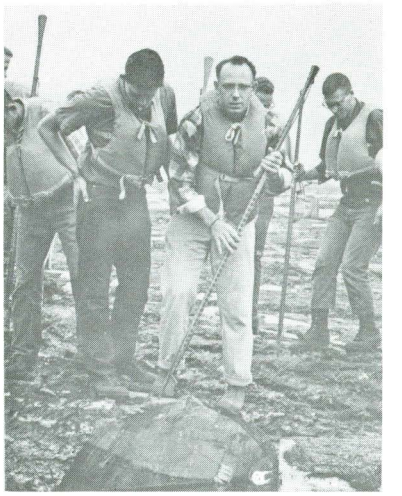
J. RICHARD DILWORTH
Head, Forest Management Dept.

Dick received his B.S. from Iowa State in 1937 and his M.S. in 1938 from the same school. He taught at Louisiana State University for the next eight years before coming to O.S.U. in 1946. Dick took a leave in 1956 to complete his Ph.D. at the University of Washington. He is presently teaching photogrammetry courses and working in curriculum development.



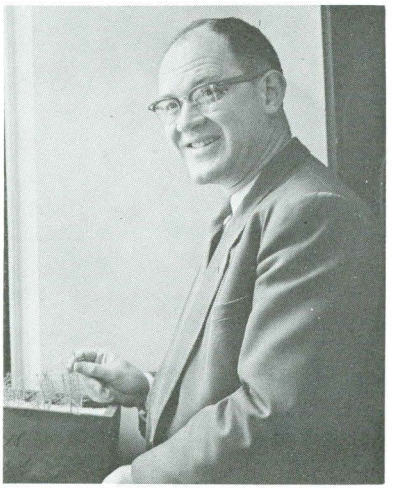
GEORGE BARNES

George graduated with a B.S. from the University of Washington in 1924 and with a M.S. from the University of California in 1927. He came to O.S.U. in 1943 and taught forest management before going to Duke University to receive his Ph.D. in 1946. George is presently Associate Director of the Forest Research Division of the Agriculture Experiment Station.



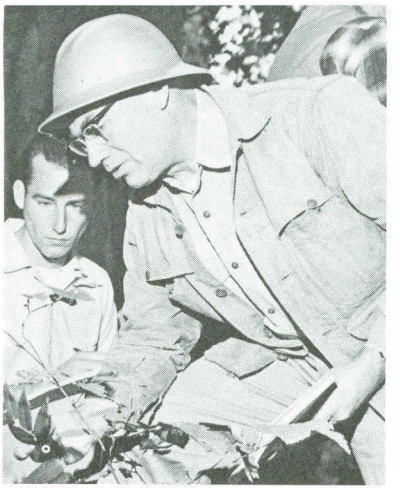
JOHN F. BELL

John graduated from O.S.U. in 1949 with a B.S.F. and received his M.F. from Duke in 1951. John spent 10 years working for the State Forestry Department before joining the School of Forestry faculty in 1959. He is presently teaching mensuration and timber growth.



WILLIAM K. FERRELL

Bill received his B.S.F. from the University of Michigan in 1941, his M.S. in 1948 and his Ph.D. from Duke University in 1949. He came to OSU in 1956 and now teaches silviculture and graduate courses and is engaged in ecological research.



ROBERT F. KENISTON

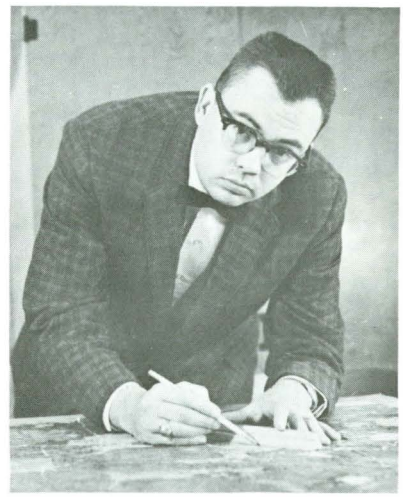
Bob graduated with a B.A. in 1929 from Nebraska and received his B.S. in 1937 and his M.S. in 1941 from California. He came to O.S.U. in 1946. Bob has completed work for his Ph.D. at Yale and is presently teaching courses in dendrology and valuation.

JAMES T. KRYGIER

Jim graduated in 1952 with a B.S. from Utah State and received his M.S. in 1955 from the same school. After coming to O.S.U. he taught mensuration, forest protection, and watershed management. Jim's special interests are the effects of logging on the watershed and water use by plants.

MICHAEL NEWTON

Mike received his B.S. from University of Vermont in 1954 and a B.S. and M.S. from O.S.U. in 1959. After receiving his degrees from O.S.U., he became a member of the School of Forestry staff. He did not teach this year, but he does research on brush control and reforestation.



DAVID P. PAINE

Dave received both degrees from O.S.U. – his B.S. in 1953 and his M.S. in 1958. He joined the staff in 1962 and now teaches forest protection, mensuration and timber growth. Dave's interests are photogrammetric mensuration and statistics. He is currently working toward a Ph.D. degree.

WARREN R. RANDALL

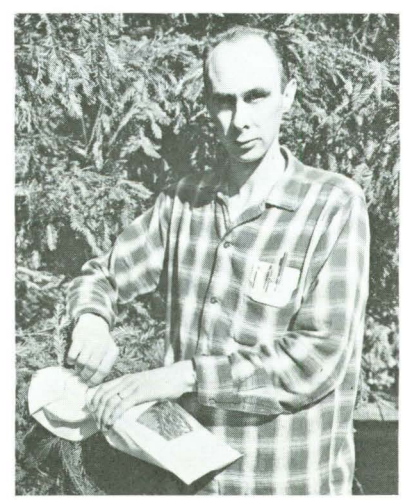
Casey received his B.S.F. in 1943 and his M.S.F. in 1947 from the University of Idaho. He joined the O.S.U. faculty in 1947 and is presently teaching timber growth, recreation, and tree identification.

DAN D. ROBINSON

Dan graduated from O.S.U. in 1940 with a B.S.F. and received his M.F. in 1942 from Syracuse University. Before Dan joined the O.S.U. faculty in 1946, he worked as a district fire warden, farm forester, and extension forester. He now teaches silviculture, fire control, forest administration, and pine forest practices.

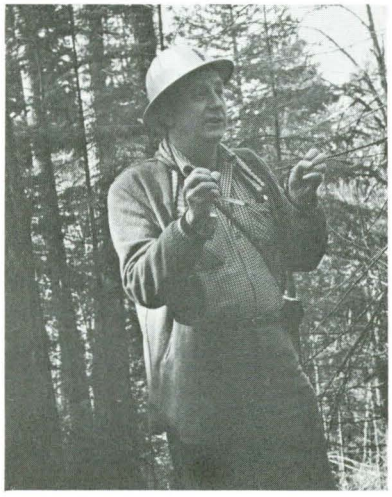
CHARLES F. SUTHERLAND

Chuck received his B.S.F. in 1948 from the University of Idaho and after working for the Potlach Forestry Department for five years, he returned to the University of Idaho to receive his M.F. in economics in 1954. He received his Ph.D. from the University of Michigan in 1961. Chuck spent two years (1957-58) with the Lake States Forest Exp. Station before coming to O.S.U. He teaches forest economics and is also engaged in research at the school.



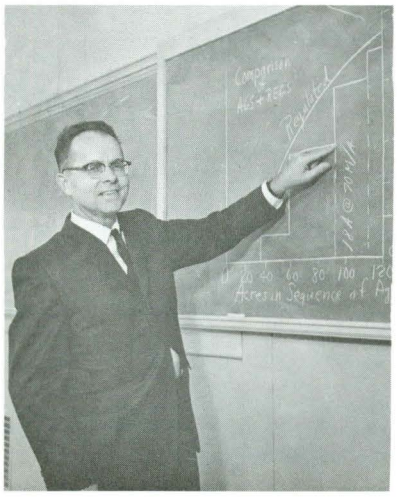
STEVE WOODARD

Steve received his B.S. in 1963 at O.S.U. He is now doing research while filling in for Dr. Helg Irgens-Moller, who, is on sabbatical leave.



THEODORE R. YOCOM

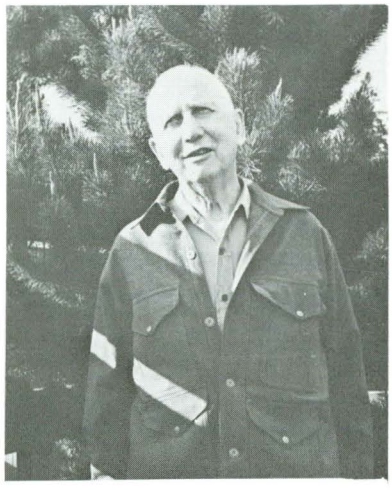
Ted received his B.S. degree in 1941 at Iowa State University. Before coming to O.S,U. he spent nearly twenty years in private industry. He completed his M.F. degree at O.S.U. in 1962. He is currently teaching mensuration and forest protection while working toward a Ph.D. in Economics.



RAY A. YODER

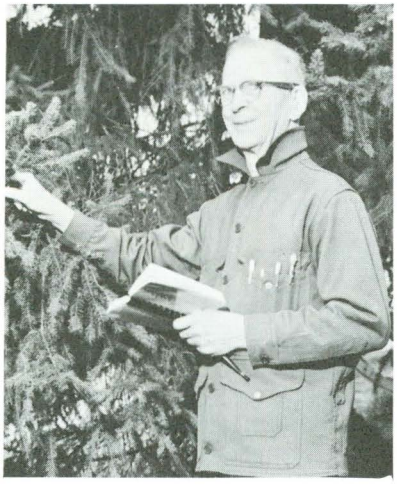
Ray received his B.S. from O.S.U. in 1941 and his M.F. from Harvard in 1942. Ray had industrial forestry experience in the South before joining the staff in 1949. He spent two years in Thailand aiding in setting up a forestry curriculum at the University in that country. Ray teaches courses in forest management, industrial forestry and multiple-use management. His special interest is in developing case studies in industrial forestry.

Professors Emeritus



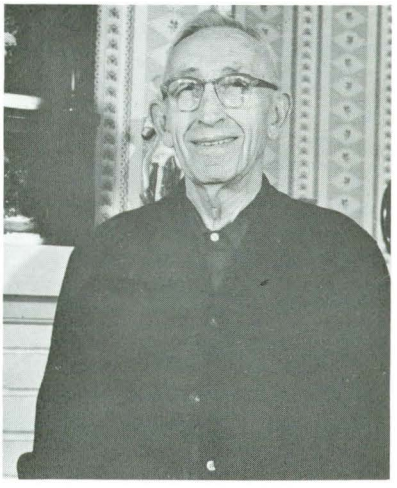
ALEX J. JAENICKE

Alex received his B.S.F. from Pennsylvania University in 1912. He then worked with the U.S. Forest Service for the next 45 years until he came to O.S.U. As a member of the School of Forestry staff Alex taught orientation, protection, timber management, and forest administration. Alex is retiring from teaching at the end of spring term.



HARRY L. NETTLETON

Net graduated from O.S.U. in 1921 and taught at the School of Forestry for the following two years. He received his M.S. from the University of Idaho in 1928 and then worked for both the Indian Service and the B.L.M. From 1948 to 1959 he was Forest Manager of McDonald Forest. Net has retired but teaches a tree identification class.



HENRY R. PATTERSON

Pat holds the record for length of service at O.S.U. He came here in 1920, after receiving his B.S. in civil engineering from the University of Oregon in 1909 and spending the next 11 years as a logging engineer. Pat retired as Head of the Forest Engineering Dept. in 1951 but still has a desk on the third floor of the Forestry Building.

Administration Staff

WILLIAM P. WHEELER

Bill graduated with a B.S. degree from the University of Minnesota in 1948 and received his M.F. a year later from the same school. In 1949 he came to O.S.U. and taught forest management and engineering courses. Bill was appointed Director of Personnel in 1955 and his teaching is directed towards silviculture and forest administration courses.

E.K. McLAREN

Ken received his B.S. in Electrical Engineering at the U.S. Naval Academy in 1934. In 1963 he obtained a B.S. in Forestry at O.S.U. He is currently acting as Assistant to the Dean in the absence of Chuck Dane. As a reprieve from fighting the problems of his office, he occasionally teaches FE labs.

One of Bill's many duties is employment counseling.

Office Staff

Left to right: Clara Homyer, Winnie McFarland, Pat Morehouse, Jackie Stiller, Margaret Garcia, Dottie Rideout.

Winnie McFarland

Clara Homyer
Deans Secretary

Pat Morehouse

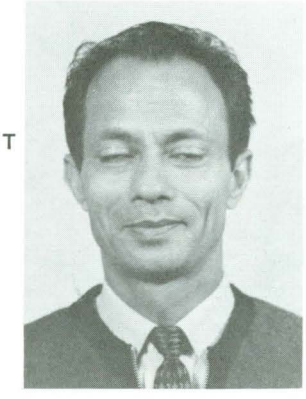
Mary Laurence
Janitress

Jackie Stiller

GRADUATE STUDENTS

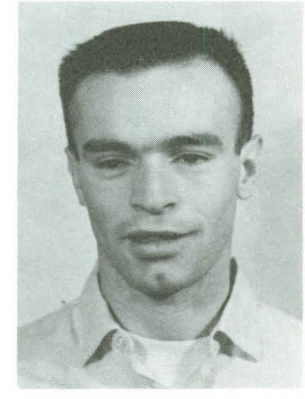
NETRA BAHADUR BASNYAT

Special Studies
Forest Ranger's College,
India



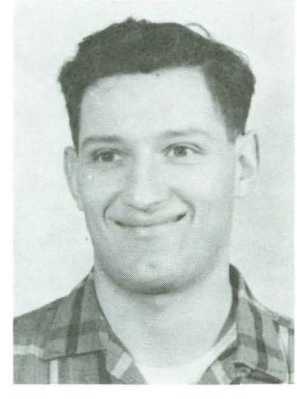
L. MONROE BICKFORD

M.S. Forest Management
B.S. Washington State Univ.



BANLEU CHUA-INTRA

M.F. Forest Management
B.S. Kasesart University



ROY C.A. GILBERT

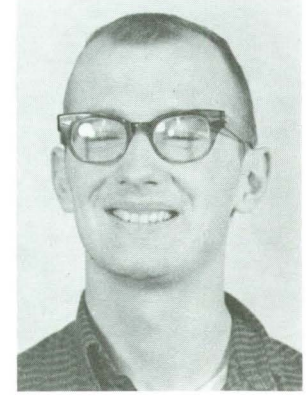
M.F. Silviculture
B.S. Michigan State
University

THOMAS E. GREATHOUSE

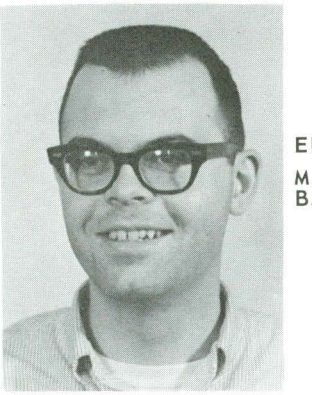
Ph.D. Forest Genetics
B.S. University of Michigan
M.S. University of Michigan

ALLAN J. HETTINGER

M.F. Forest Management
B.S. Oregon State University



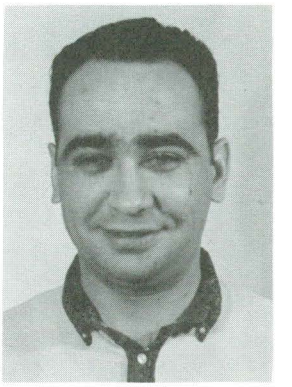
RAYMOND E. JACKMAN
M.F. Forest Management
B.S. Washington State Univ.

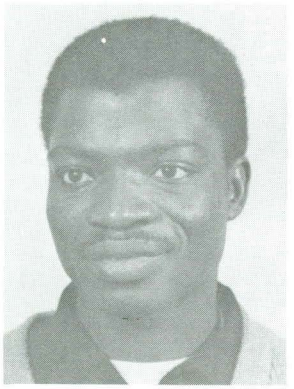


ELWOOD L. MILLER
M.S. Forest Management
B.S. Arizona State University

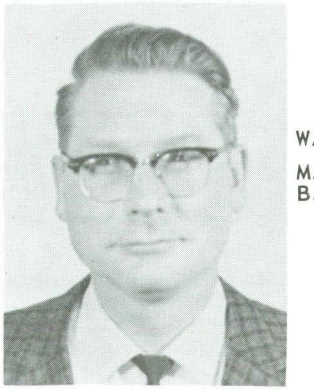
FRANCIS R. MOHR
M.S. Silviculture
B.S. Utah State University

BIJAN PAYANDEH
M.F. Forest Management
B.S. Teheran University



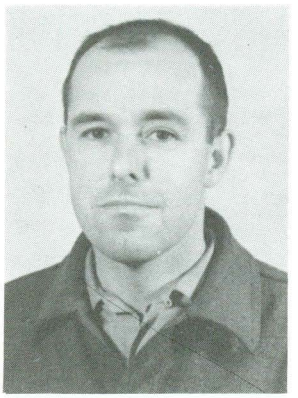


BISMARCH G. REEVES
M.F. Forest Management
B.S. University of Liberia

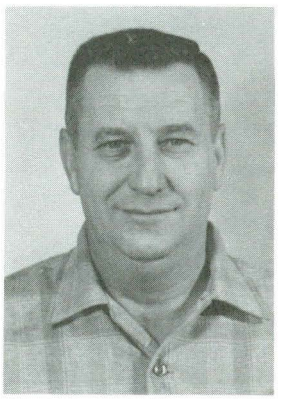


WALTER W. SCHUTT
M.S. Forest Mensuration
B.S. Iowa State University

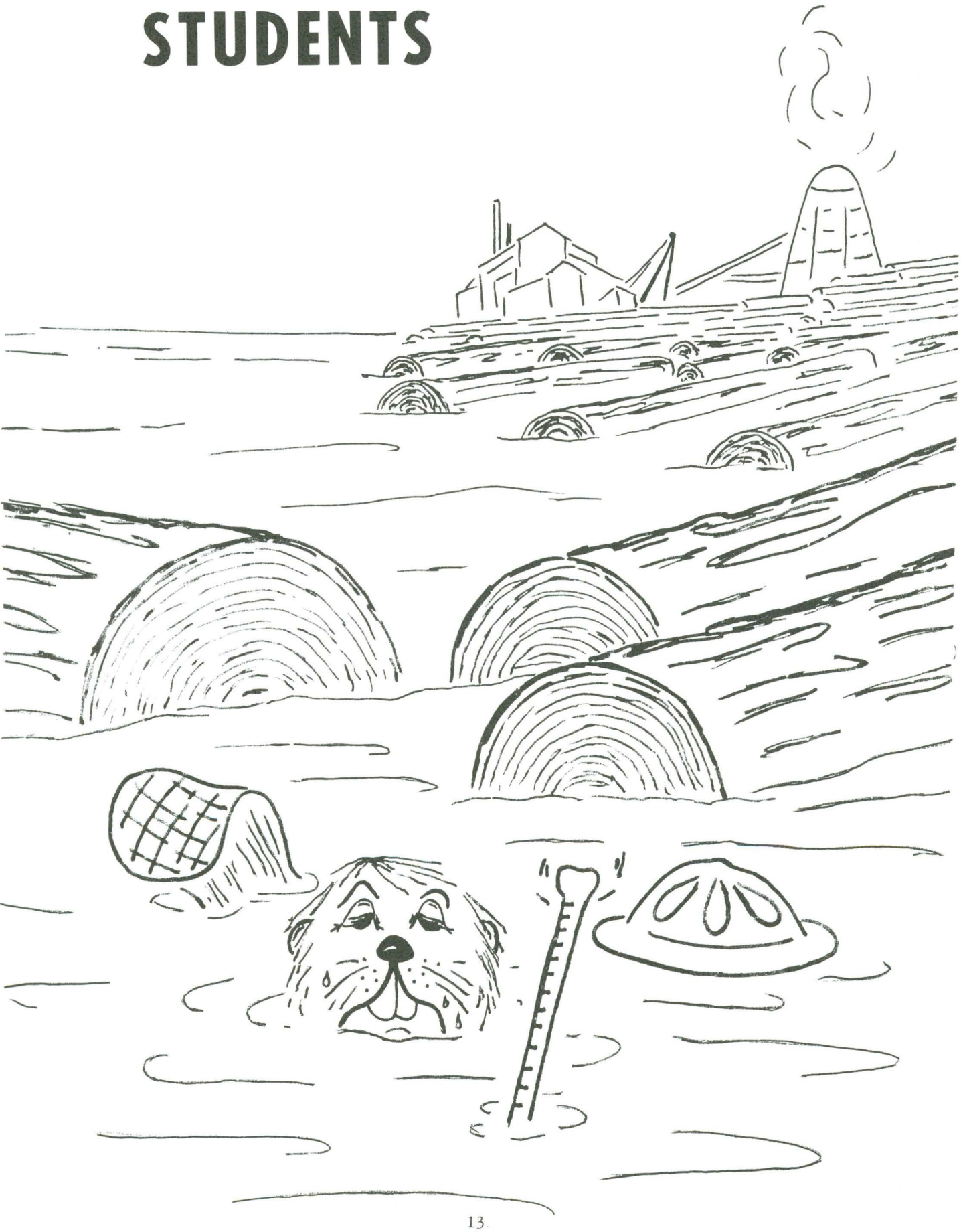
ROBERT B. STRAND
Ph.D. Silviculture
B.S. University of Washington
M.F. University of Washington



THEODORE R. YOCUM
Ph.D. Forest Management
B.S. Iowa State University
M.F. Oregon State University



STUDENTS



GRADUATING SENIORS

GEORGE BACKMAN
F.M.

Coos Bay, Ore.
Single
Experience
2 seasons Georgie Pac.
1 season BLM
3 years U.S. Navy
Future Plans
BLM

TOM BAROCAN
F.M.

Milwaukie, Ore.
Single
Experience
3 seasons USFS
1 Seasons Ketchikan Pulp Co.
1 Season Brown & Brown Timber Engineering
Activities
S.A.F.
Phi Kappa Theta
Future Plans
Undecided

ROBERT DEAN BERENDS
F.M.

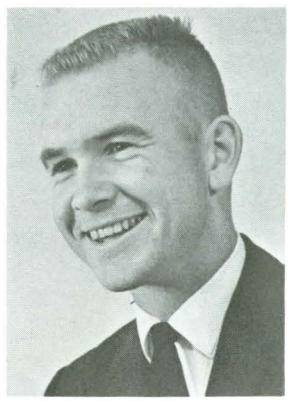
Oakridge, Ore.
Married
Experience
9 months USFS
9 months Simpson Timber
8 months Jackson & Prachn Consulting Forest Engr.
2 years U.S. Army
Activities
Forestry Club
Spring Thaw
Future Plans
Private industry

FRANK BERNRITTER
F.M.

St. Marys, Kansas
Married
Experience
3 seasons USFS
1 season logging
1 season mill work
Activities
Forestry Club
S.A.F.
Fernhopper Banquet
Spring Thaw
Mac Forest Day
Future Plans
USFS

LARRY B. BLASING
F.M.

Prairie City, Ore.
Married
Experience
3 years USFS
1 season Linn Co. Fire Pat.
1 season OSU Range Dept.
Activities
Forestry Club–1st V Pres.
S.A.F.
Fernhopper Banquet–Com Chairman
Spring Thaw
Mac Forest Day
Fernhopper Sports
Future Plans
Undecided

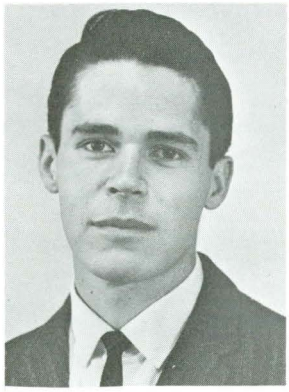


RONALD E. BOBBETT
F.P.

Anaheim, Calif.
Married
Experience
1 season USFS
1 season Pacific N.W. Forest & Range Experiment station
7 months Timber Engr. Co
Activities
Forestry Club
Xi Sigma Pi
Future Plans
Private Industry

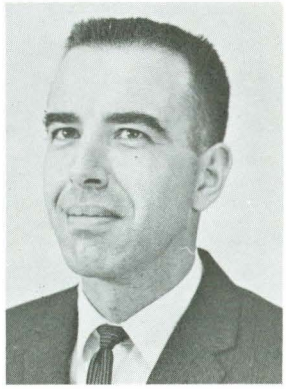
JOHN CHITTY
F.M.

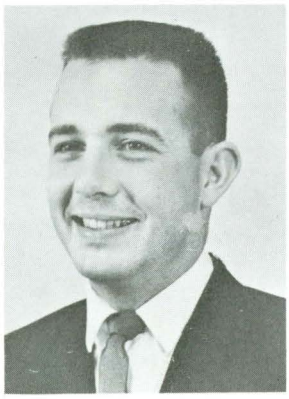
Akron, Ohio
Single
Experience
2 seasons Weyerhaeuser
1 season USFS
Activities
Forestry Club
Hi Lead
Phi Kappa Tau
Future Plans
Undecided



ELVIN E. COLE
F.M.

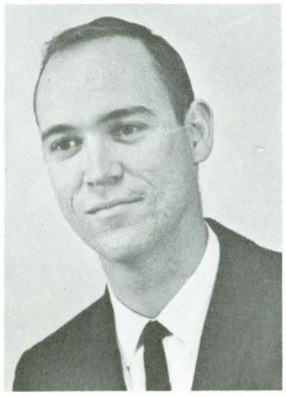
Single
Experience
3 seasons USFS
2 years U.S. Army
Activities
Forestry Club
OSU Flying Club
Future Plans
USFS





DAVID D. CHRISTENSEN
F.M.

Portland, Ore.
Married
Experience
8 seasons Ore. St. Bd. For.
Activities
Forestry Club– Jr. Rep.
Annual Cruise
Hi Lead
S.A.F.
Rowing Club
Society of Amer. Mil. Engr. – Treasurer
Army R.O.T.C.
Future Plans
U.S. Army
Private Industry



CARROLL D. CROPLEY
F.E. – F.M.

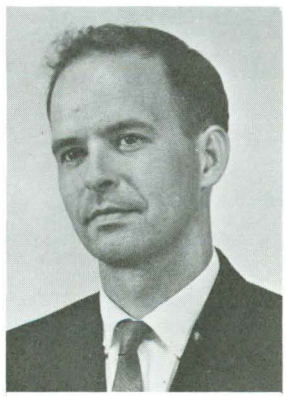
San Diego, Calif.
Married
Experience
2 seasons USFS
1 season BLM–engr. crew boss
Activities
Forestry Club
Annual Cruise–Activities and layout
Mac Forest Day – Foreman growth plot crew
Future Plans
Work in pine country

DENNIS CROWE
F.E.

Hood River, Ore.
Married
Experience
1 season fire crew, Hines Lumber Co.
2 seasons logging
1 season road engr. Pope & Talbot
Activities
F.E. Rep.
Annual Cruise – Layout mgr.
Hi Lead
S.A.F.
Spring Thaw Chairman
Mac Forest Day
Fernhopper Basketball
Future Plans
Logging Engr. Private Industry

DONALD J. CURTIS
F.M.

Oregon City, Ore.
Single
Experience
2 seasons USFS – Insect control
2 seasons Ore. St. Bd. For.
2 years Publisher's Paper
2 years U.S. Army
Activities
Forestry Club
Future Plans
Undecided



STEPHEN A. FITCH
F.M.

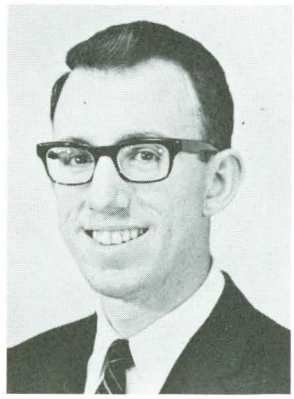
Glendale, Calif.
Married
Experience
3 seasons USFS
Activities
Forestry Club
S.A.F.
Fernhopper Banquet
Scholarships
Pasadena Education Assn
Robert D. Haugh
Forestry Leadership
Outstanding Soph. Award
American Legion Post 13
Degrees
Associate of Arts–Pasadena City College
Future Plans
USFS

JEROME L. DeVILBISS
F.E.

Burlington, Iowa
Single
Activities
Annual Cruise – Ad manager
Hi Lead
Forestry Club
S.A.F.
Xi Sigma Pi
Toastmasters
Future Plans
Naval Aviation

JOHN C. FLANAGAN
F.P.

Medford, Ore.
Married
Experience
9 seasons Elk Lumber Co.
Activities
Forestry Club–F.P. Rep.
S.A.F.
Xi Sigma Pi– Forester
Future Plans
Private Industry



RON GRANT
F.P.

Portland, Ore.
Single
Experience
1 season Simpson Redwood
2 seasons National Science Foundation research
Activities
Forestry Club–F.P. Rep.
Hi Lead
Xi Sigma Pi– Sec. Treas.
Lambda Chi Alpha– Pres.
Scholarships
Evans Products Co.
Cole, Clark & Cunningham
Future Plans
Graduate School

ROD GRAVES
F.M.

West Linn, Ore.
Single
Experience
1 season Ore. St. For. Dept.
1 season U.S. Plywood
1 season USFS
Activities
Forestry Club
Spring Thaw
Mac Forest Day
Intramurals
Future Plans
USFS

TOMMY HINTHORNE
F.E.

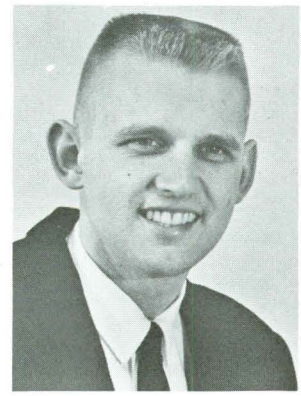
Sweet Home, Ore.
Single
Experience
1 season fire control
2 seasons logging road construction
2 seasons heavy const.
Activities
Blue Key
Thane V.P.
Forestry Club
Forestry Senator
ASOSU Election comm.
ASOSU Student Life com.
ASOSU Student conduct com.
Future Plans
Graduate School

BERT L. HOCKETT
F.M.

Bend, Ore.
Married
Experience
4 years private
4 seasons Ore. St. For. Dept.
1 season USFS
Activities
Forestry Club
Mac Forest Club – chrm.
Tug-o-War
Future Plans
Undecided

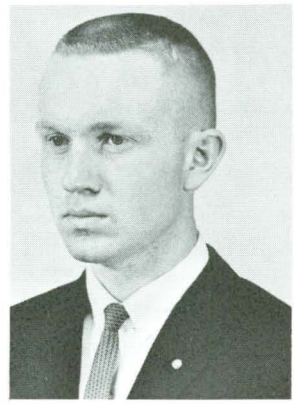
MICHAEL C. JACKSON
F.M.

Independence, Missouri
Single
Experience
3 seasons Dept. of Nat. Resources
4 years. U.S. Coast Guard
Activities
Forestry Club - Sec.
Living Group– social chr. work manager
Future Plans
Undecided



ROY W. JONES
F.M.

Oroville, Calif.
Single
Experience
3 seasons Calif. Dept. For.
1 season Ore. St. Bd. For.
1 season logging
Activities
Forestry Club
S.A.F.
Tug-o-War
Lambda Chi Alpha
Varsity Football
Future Plans
Private industry

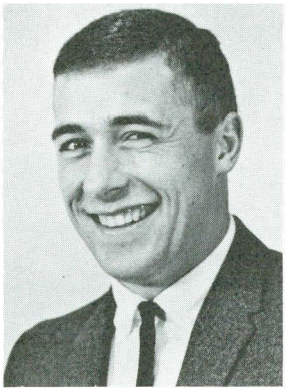


TED R. KINNEY, JR.
F.M.

Ashland, Ore.
Single
Experience
4 seasons USFS
Activities
Forestry Club–Soph Rep., Treas.
Annual Cruise
Hi Lead
Fernhopper Banquet
Entertain chrm.
Xi Sigma Pi
AFROTC
Scholarships
Crown-Zellerbach
Santiam
Future Plans
USAF
Private Industry

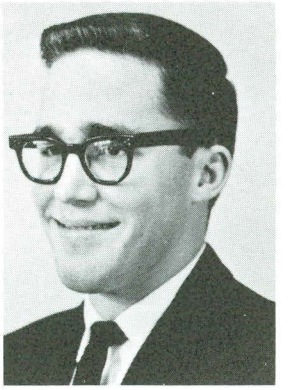
GREG LANCASTER
F.E.

Remote, Ore.
Single
Experience
1 season Georgia Pacific
2 seasons construction
Activities
Forestry Club
Mac Forest Day
Future Plans
Military
Private industry



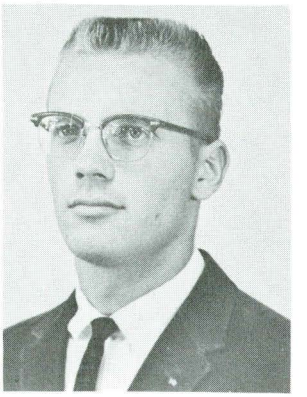
TERRY LITTLE
F.M.

Portland, Ore.
Single
Experience
4 seasons USFS
3 seasons private industry
1 season Ore. St. Bd. For.
Activities
Forestry Club
S.A.F.
Future Plans
Navy O.C.S.
Private industry



JAMES A. MASON
F.M.

Milwaukie, Ore.
Single
Experience
2 seasons USFS
1 season PNW For. Range Exp. Station
1 season Weyerhaeuser Co.
Activities
Forestry Club
Xi Sigma Pi
Living Group–Pres., Thane, advisor
Scholarships
Floyd Hart Memorial
Future Plans
Graduate School
Private industry



H. RICHARD NASH
F.M.

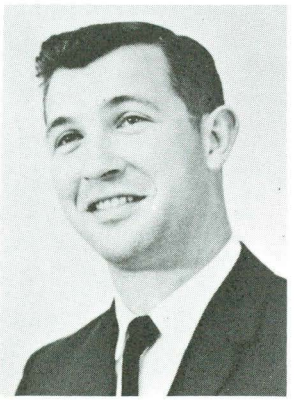
San Diego, Calif.
Single
Experience
2 seasons Calif Div. For.
1 season Nat. Res. Dept. Wash.
1 season USFS
Activities
Forestry Club
Hi Lead
Alpha Gamma Rho
Future Plans
USFS – Calif.

ALAN F. NICHOLS
F.E.

Lake Oswego, Ore.
Married
Experience
2 seasons logging
4 seasons highway const.
2 seasons dam const.
1 season USFS
4 yrs. U.S. Marine Corps
Activities
Forestry Club–Pres.
S.A.F.
Fernhopper Banquet
Delegate to '63 A.W.F.C.
O.S.U. Sea Beavers
Future Plans
Private industry

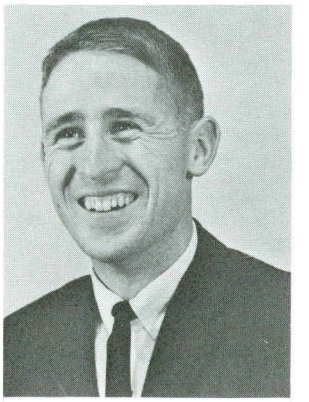
CURTIS J. PASKETT
F.M.

Sacramento, Calif.
Single
Experience
1 season Calif State Board Forestry
1 season Ore. St. Bd. For.
1 season OSU Natural Science Foundation
Activities
Hi Lead Editor
S.A.F.
Future Plans
I.V.S.– Algeria



TOM PATERSON
F.M.

Forest Grove, Ore.
Single
Experience
5 seasons Ore. St. Bd. For.
U.S. Army
Activities
Forestry Club
S.A.F.
Future Plans
Forest Management



CLIFFORD C. PERIGO
F.E. – F.M.

Burlingame, Calif.
Married
Experience
3 seasons USFS
Activities
Forestry Club–treasurer
Annual Cruise–editor
S.A.F.
Fernhopper Banquet–entertainment chrm.
Fernhopper Basketball
Future Plans
USFS

ERNEST PUNG
F.M.

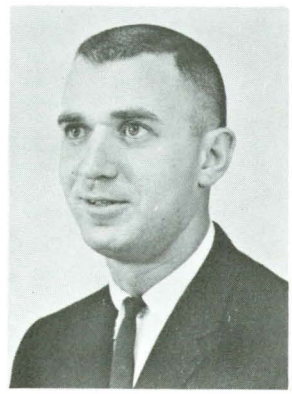
Hilo, Hawaii
Married
Experience
11 years Hawaii Forest Div.
1 season USFS
2 years U.S. Army
Activities
Mac Forest Day
Future Plans
Natural Resources
Hawaii

ELSBERY REYNOLDS
F.M.

Hemet, California
single
Experience
2 seasons USFS
2 seasons Nat Park Ser.
Activities
Forestry Club –
AWFC conservation officer
AWFC Conclave
Cauthorn Hall–Prs.
Alpha Phi Omega–V-Pres.
Inter-Dorm Council
Future Plans
Church Divinity
School of the Pacific –
Episcopal minister

RICHARD L. ROBERTSON
F.M.

Portland, Ore.
Single
Experience
1 season USFS
1 season Nat. Science
Found. Assistant
1 season Ore St Bd For.
Activities
Forestry Club
S.A.F.
Xi Sigma Pi
Mac Forest Day
Scholarships
N.S.F.–South Santiam
Future Plans
Graduate School
Washington



JAMES ROMBACH
F.M.

Crescent City, Calif.
Single
Experience
3 seasons USFS
1½ yr part time, USFS
1 season BLM
1 season private
Activities
Forestry Club– Sr. Rep.
S.A.F.
Fernhopper Banquet
Spring Thaw
Toastmasters
Living group– Athletic
mgr.
Future Plans
USFS
Army

ROY H. SCANTLEBURY
F.M.

Cleveland, Ohio
Single
Experience
2 seasons USFS
Activities
Forestry Club
Intramural Sports
Thane
Future Plans
Military service
USFS

KIRBY SCHWINCK
S.M.

Altadena, California
Married
Experience
4 seasons USFS
Activities
Forestry Club
S.A.F.
Spring Thaw
Theta Chi
Intramural Sports
Degrees
Associate of Arts –
Pasadena City College
Future Plans
Undecided

GARY V. SMITH
F.M.

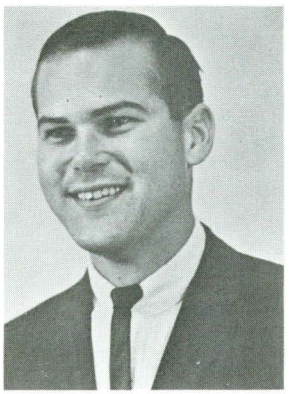
Mapleton, Ore.
Single
Experience
6 months U.S. Plywood
15 months USFS
3 mo. construction crew
Activities
Forestry Club
Spring Thaw
Mac Forest Day
Living Group Treasurer
Future Plans
U.S. Army

JOHN LEE SOUTHWICK
F.M.

San Diego, Calif.
Married
Experience
4 seasons Ore. St. Bd. For.
2 seasons Wolley Log. Co.
2 years U.S. Army
Activities
Forestry Club
S.A.F.
Future Plans
Private industry

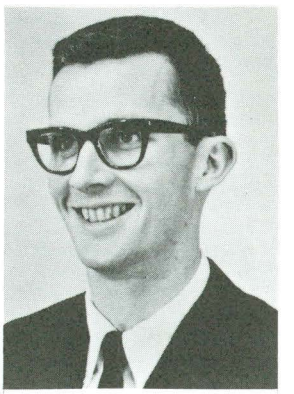
RON STEWART
F.M.

San Carlos, Calif.
Married
Experience
2 seasons Calif. Div. Beaches and parks
1 season N.S.F. Research Assistant
Activities
Forestry Club
Annual Cruise
S.A.F.
Xi Sigma Pi– ranger
Mac Forest Day
Spring Thaw
Scholarships
N.S.F.–Crown-Zellerbach
Future Plans
M.S. degree, O.S.U.



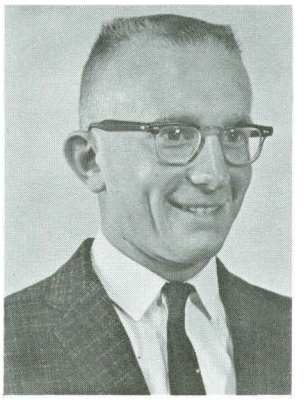
RONALD E. STUNTZNER
F.E.

Emporia, Kansas
Married
Experience
1 season BLM
1 season Pope & Talbot
Activities
Forestry Club
S.A.F.
Alpha Kappa Lambda – Vice President
Scholarships
Alpha Kappa Lambda
Future Plans
Consulting work
Private industry



R.V. TARAS
F.M.

Pebble Beach, Calif.
Single
Experience
2 seasons smoke jumping
2 seasons RI fire crew, Calif.
1 season Johnson Flying Service
Activities
Forestry Club
Hi Lead
Fernhopper Banquet
Phi Kappa Epsilon
Pres. Hawthorne Manor
Forestry Senator
Future Plans
Nevada For. Service



FRANK WILLIAMS
F.E.

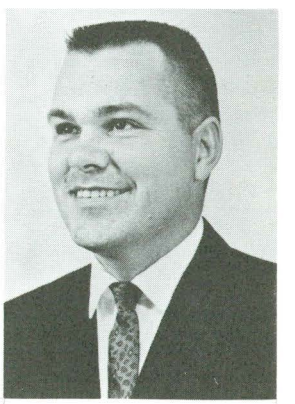
North Bend, Ore.
Single
Experience
2 seasons USFS
1 season BLM
Activities
Forestry Club
Xi Sigma Pi
Pi Mu Epsilon
Phi Kappa Phi
Living Group–Vice Pres, Treas.,
Weatherford Hall–Treas.
Scholarships
Weyerhaeuser
Future Plans
Masters in F.E.

JOHN E. WILSON
F.M.

Salem, Oregon
Married
Experience
5 seasons Ore. St. For. Dept.
1 season BLM
Activities
Forestry Club
S.A.F.
Future Plans
Army 3 years

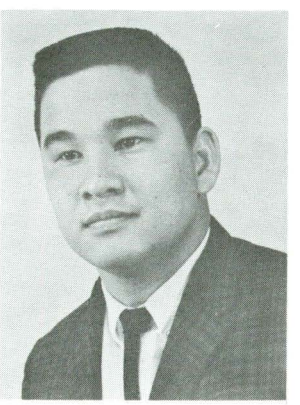
GENE WIRSIG
F.M.

Omaha, Nebraska
Married, 1 child
Experience
2 seasons USFS
3 years U.S. Army
Activity
Forestry Club
Spring Thaw
Mac Forest Day
Phi Kappa Phi
Scholarships
Hill Foundation
Degrees
B.A. Psychology U. of Omaha
Future Plans
USFS



MICHAEL D. WIRTZ
F.M.

Oakland, Calif.
Married
Experience
3 seasons USFS
Activities
Forestry Club
S.A.F.
Fernhopper Banquet
Future Plans
USFS

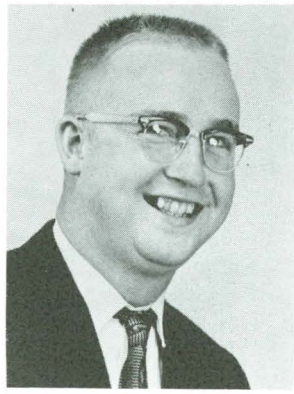


WES WONG
F.M.

Wailuku, Maui, Hawaii
Single
Experience
2 seasons Hawaii Div. For.
1 season Hawaii Div. Fish and Game
3 years US Marine Corps
Activities
Forestry Club
Future Plans
Forestry in Hawaii

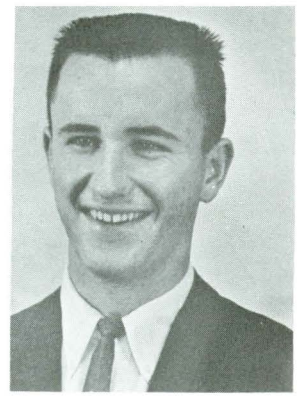
ROBERT A. WRIGHT
F.M.

Cave Junction, Ore.
Married
Experience
7 seasons Ore. For. Dept.
Activities
Forestry Club
Annual Cruise– Ad mgr.
S.A.F.
Spring Thaw
Mac Forest Day
Campus Club
Future Plans
Bureau of Indian Affairs,
Hoopa, Calif.



GENE ZIMMERMAN
F.M.

Pilot Rock, Ore.
Single
Experience
6 months Pilot Rock
Lumber Co.
12 months USFS
Activities
Living Group–Pres.
Residence Hall–Pres.
Inter-Dorm Council
Forestry Club
S.A.F.
Future Plans
USFS



JAMES R. HYDE
F.M.

Burlingame, Calif.
Single
Experience
4 seasons USFS
Activities
Forestry Club
Annual Cruise–Journal Ed
S.A.F.
Future Plans
U.S. Army
USFS

JOHN H. THOMPSON
F.E.

Sisters, Ore.
Single
Experience
7 seasons USFS
Activities
Forestry Club
Fernhopper Banquet
Degrees
B.S. Ag. O.S.U.
Future Plans
USFS

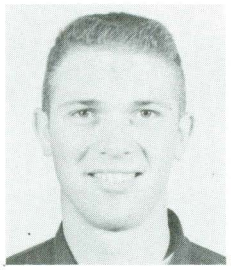
MILES F. WEAVER
F.M.

Corvallis, Oregon
Married
Experience
4 seasons USFS
5 seasons Farmwork
Activities
Forestry Club
S.A.F.
Future Plans
USFS

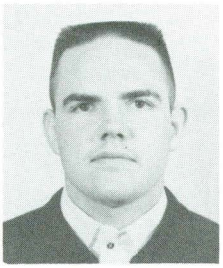
MICHAEL F. VANDEHEY
F.M.

Forest Grove, Ore.
Single
Experience
3 seasons Wash. Dept.
Natural Resources
Activities
Forestry Club
Annual Cruise
Hi Lead
Spring Thaw
Mac Forest Day
Fernhopper Sports
Future Plans
U.S. Army
Dept. Nat. Res.
M.S. Recreation

SENIORS


J. BLACK


P. BOND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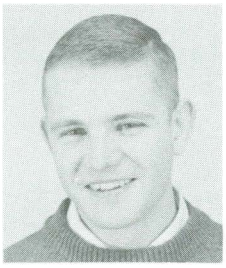
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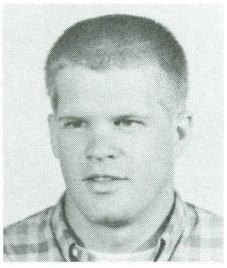
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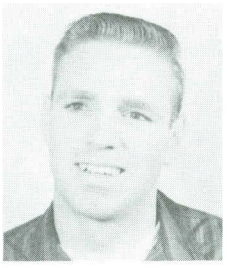
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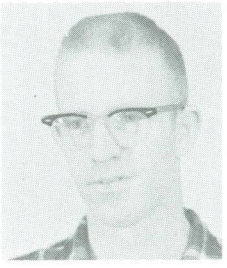
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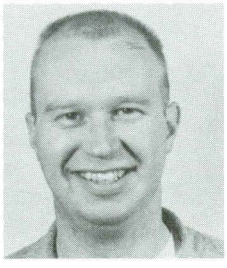
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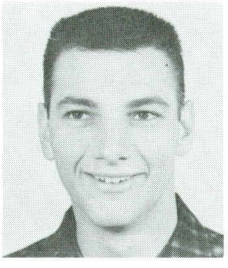
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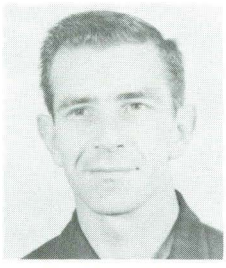
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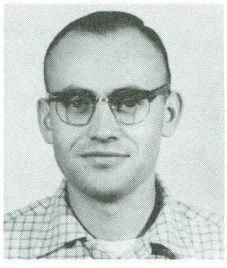
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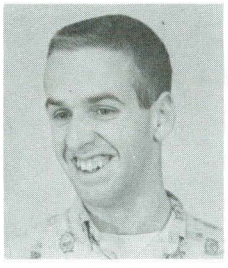
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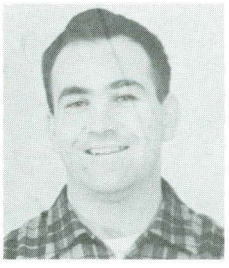
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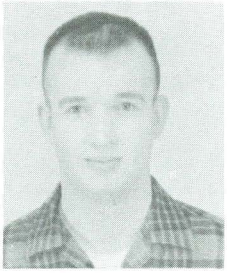
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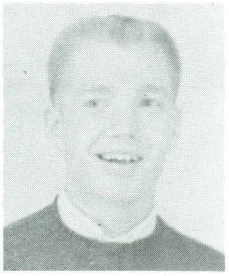
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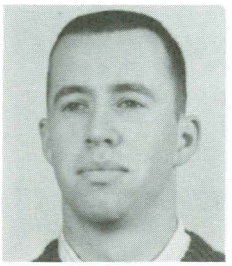
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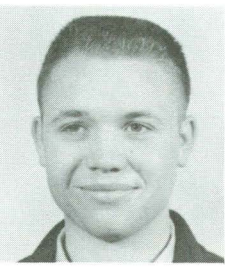
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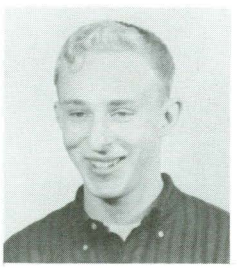
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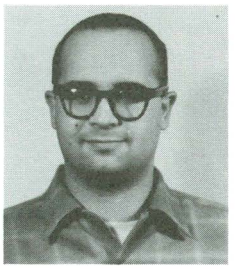
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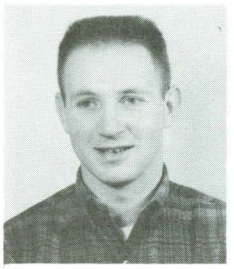
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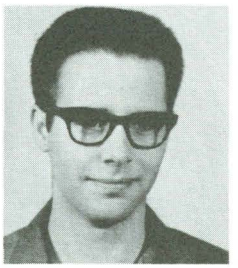
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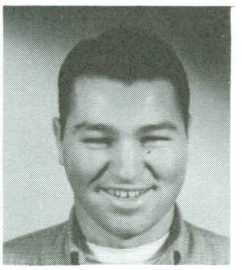
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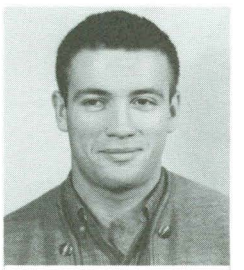
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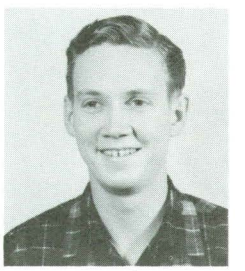
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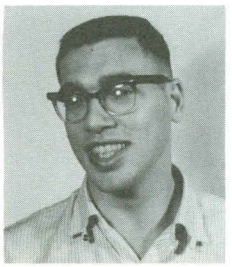
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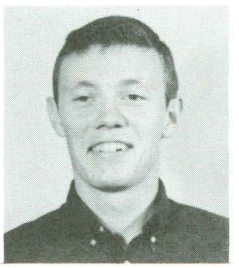
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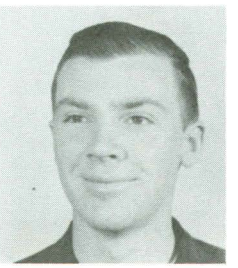
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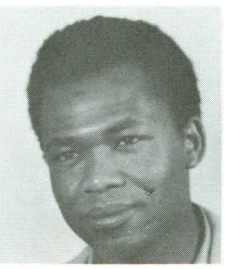
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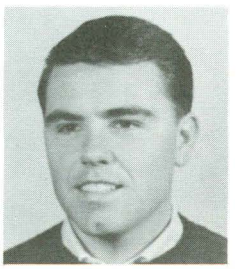
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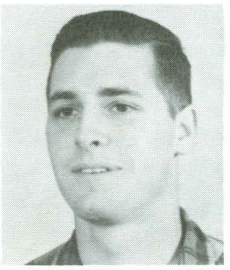
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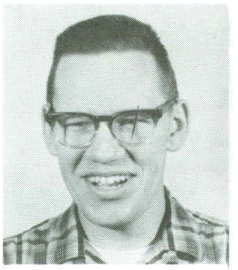
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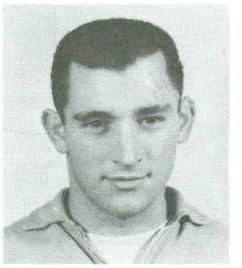
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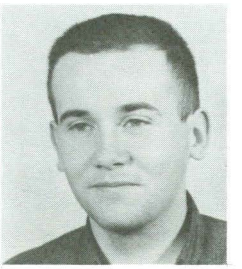
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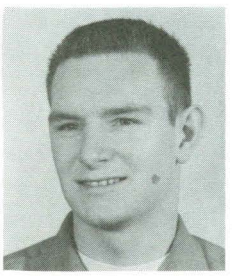
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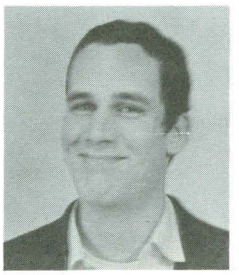
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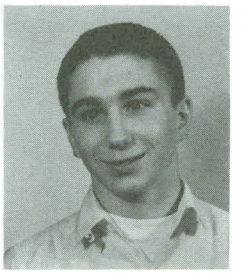
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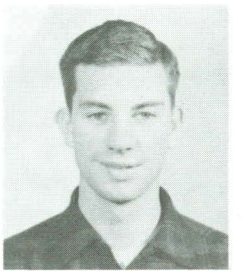
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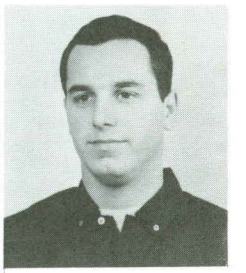
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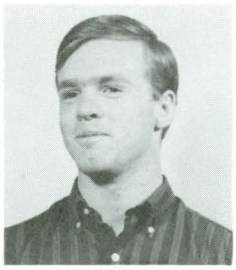

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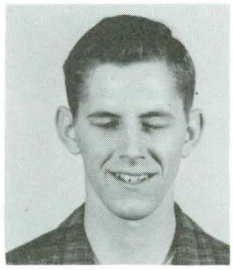

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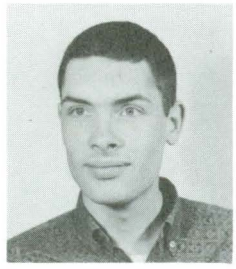

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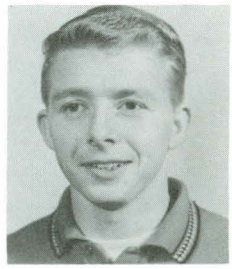

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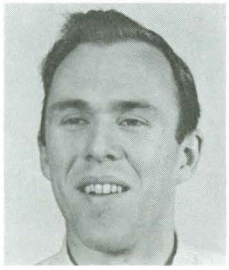

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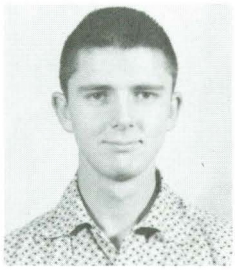

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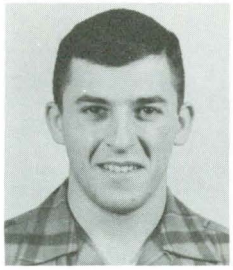

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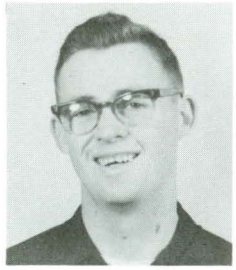

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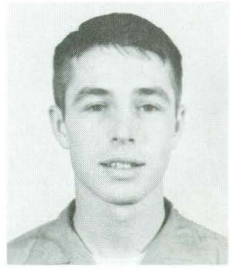

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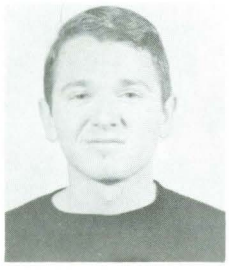

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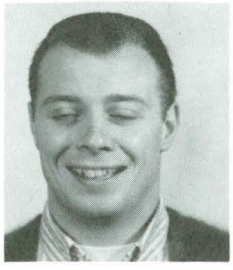

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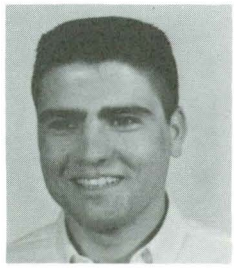

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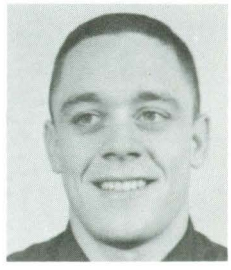

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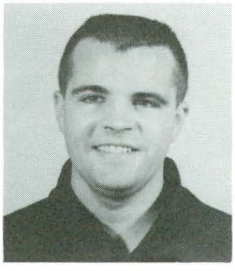

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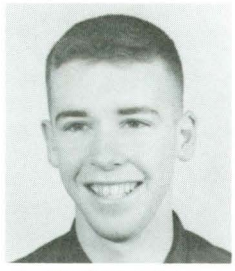

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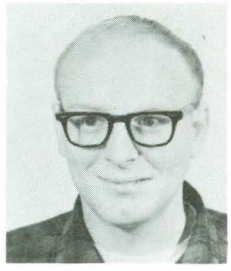

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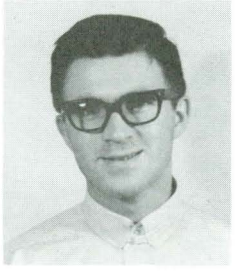
F. LOWDER



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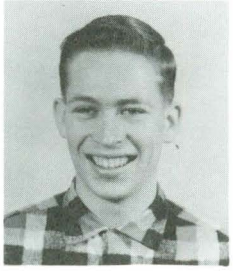

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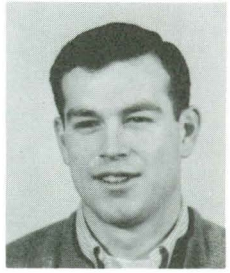

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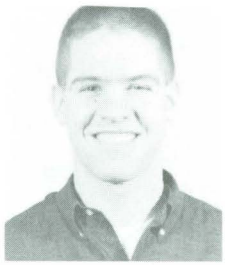
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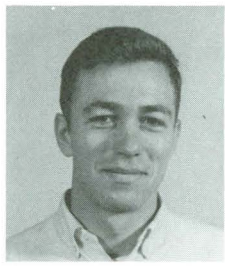
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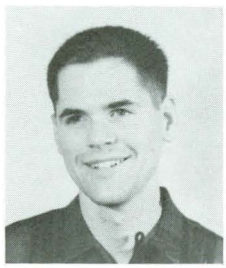
K. MIHATA


K, NEISZ


B. NELSON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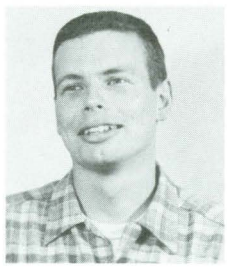
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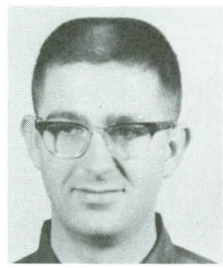
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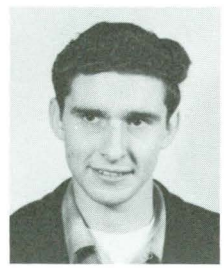
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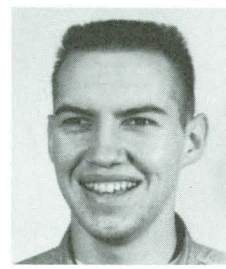
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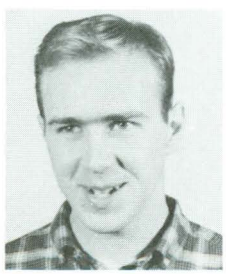
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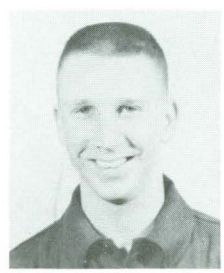
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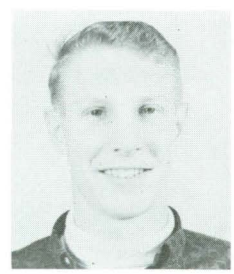
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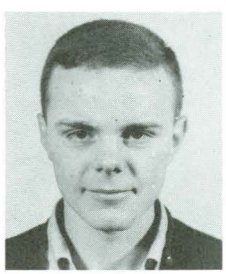
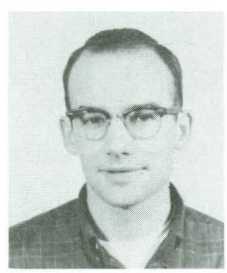

J. SCHROEDER


D. SCOTT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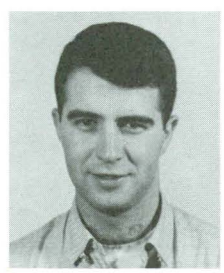
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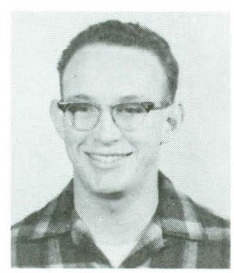
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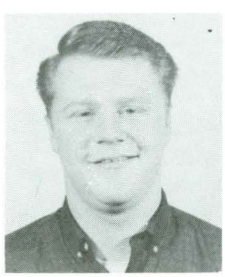
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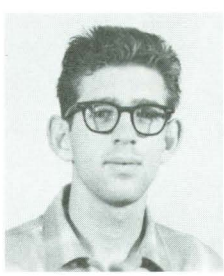
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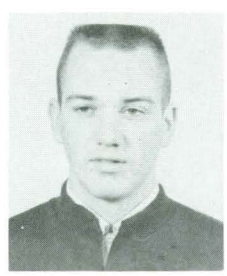
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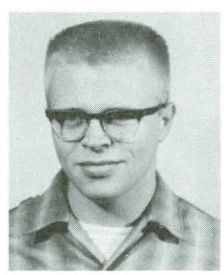
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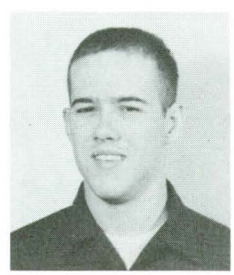
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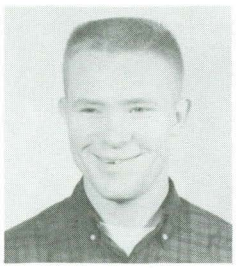

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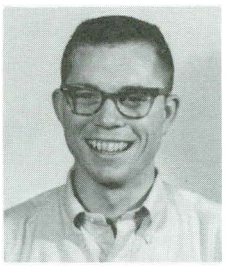

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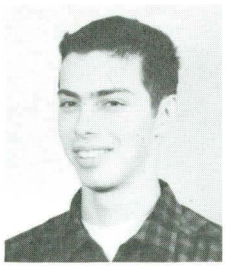

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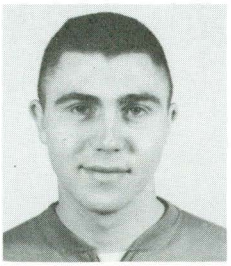

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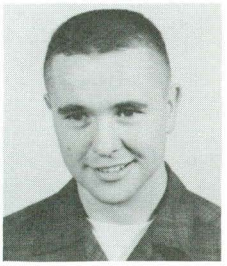

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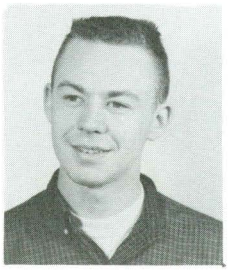

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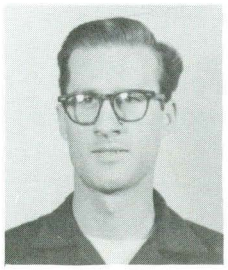


C. WOODELL

D. YUNKER

UNDERCLASSMEN

ACTIVITIES

FORESTRY CLUB

Executive Council

Sitting: L. Blasing, First V. President; A. Nichols, President; S. deKeijzer, Second V. President.
Standing: D. Crowe, J. McGhehey, C. Paskett, D. Hockett, K. Meyer, J. Flanagan, S. Schmokel, D. Coyle, B. Cooper, P. Donivan, C. Perigo, D. Yunker.

Forestry Club

The Forestry Club at Oregon State is organized to deliver to the students a professional outlook on forestry as a whole. This aim is accomplished through guest speakers, panel discussions, and films presented to the club at monthly meetings. Club activities give students the chance to become better acquainted with their professors and fellow students.

This year the forestry club had the first president from the FE department in over a decade. Cooperation with various other campus and school units made possible plans for the expansion of the parking lots at the club cabin the placing of light in the existing lot, the improvement and modification of the cabin water system, and the revival of the Forester's Ball.

Hi-Lead

The Hi-lead is the Forestry Club newspaper. It attempts to carry out the goals of the forestry club through student articles of interesting summer jobs and student views of campus and professional items. This year, editor Curt Paskett has shown desire not only to increase the quality and quantity of the articles but to better the printing of the Hi-Lead as well.

Forestry Education Committee

During Fall term of 1963, the Conservation Committee was formed as an attempt to improve the public image of the forester. The committee is composed of students who strongly believe that the future of forestry in part lies with the impression the forestry profession leaves with the public. The committee was renamed the Forestry Education Committee in keeping with the purpose of the organization.

Members of the committee have been presenting lectures to groups who are interested in forestry. Thus far, most of the speakers have appeared before grade school, junior high school, and boy scout groups. Topics of these lectures have included conservation, forestry from woods to mill, dendrology, forest protection, and natural resource use and enjoyment.

Lecture services are available to any group from grade school to women's club that is interested in what foresters have to say. Plans for the Education Committee include expanding membership and lecture services, putting the organization on a perpetual basis, and compiling an information reference source for student lecturers.

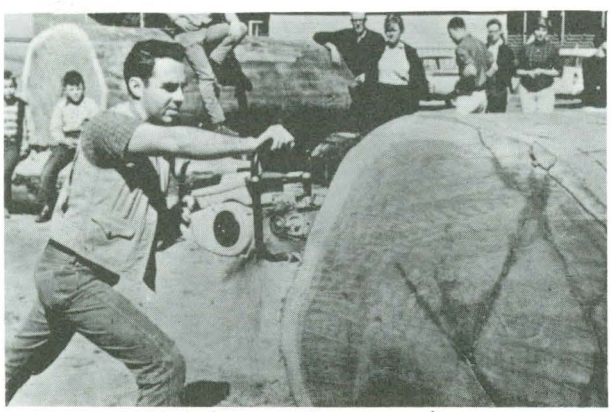
Enough has been said about the image of the forester and now is the time to do something about it.

Ron Stewart

AWFC — Association of Western Forestry Clubs

The 12th annual conclave of the Association of Western Forestry Clubs was held at Humbolt State College, Arcata, California, last Spring. Oregon State was represented by five Fernhoppers who matched their woods skills against foresters from eight other forestry schools. The Fernhoppers who attended were Larry Brown, Lynn Sprague, Lawrence Brown, Jerry Reynolds, and Alan Nichols.

The official start of the conclave, following registration day, began with welcoming addresses from the A.W.F.C. President, Bob Adams, Dean of Faculty, Dean of Forestry, and President of the H.S.C. Forestry Club. The program of the day included organized discussion groups, and activity reports from member clubs. The day was topped off with a banquet dinner that evening at the H.S.C. cafeteria with two outstanding speakers: Woody Metcalf spoke on "The Ecology of Redwood", and Gene Pickett, "The Harvesting of Redwood". The following day field trips were made to the Big Lagoon, Georgia-Pacific Operation where the foresters viewed the felling of a giant redwood. In the afternoon the group toured one of the largest mill operations in the world, the Pacific Lumber Company mill at Scotia, California. That evening the foresters slicked up and picked up their dates for a terrific formal banquet at the Eureka Inn. The speaker, Mr. Charles Connaughton, Reg. Forester, Region 5 USFS, gave an inspiring talk on the "Future of the American Forest". The talk was followed by a dance with live music.



A. Nichols competing at conclave.

Montana State took first place in the overall woods events with second place going to Arizona State. Oregon State took second place in Dendrology and Engineering. The returning Fernhoppers were regretful for not making a better showing in the events, but the enjoyable time spent with the foresters at H.S.C. and the delegates from the other schools, will always be remembered.

This spring the conclave will be held at Arizona State College, Flagstaff, Arizona. Five of our Fernhoppers will again journey to a strange land to renew our friendship and exchange ideas with foresters from the other Western Forestry Schools.

Alan F. Nichols

Forestry Femmes

Forestry Femmes, the forestry wives club at Oregon State University, started the year in April with the election of 1963-64 officers. Pat Yunker was elected President with Pat Crowe, Vice President; Marlene Nichols, Recording Secretary; Joyce Stuntzner, Corresponding Secretary; and Sharlene Southwick, Treasurer.

Femmes traditionally plan, prepare and serve food for the Forestry Club's Spring Thaw, Mac Forest Day and the Christmas Dinner-Dance.

This year's club started a special project they hope future year's groups will want to continue. They "adopted" Portland Cottage, a living group of 10 to 14 year old girls at the Farm Home just north of Corvallis. They played volleyball with them, planned a valentine party, did krafts, toured points of interest at OSU, and showed them forestry films.

The wives had many fun and informative meetings this year beginning with Dean McCulloch giving some advice to wives and showing slides of the trip he and Mrs. Mac took through the Utah Red Rock Country. There was a tour of the Forestry Building with several husbands explaining and even demonstrating many of the things that the wives had heard so much about at home, but never quite understood such as increment borer, stereoscope, staff compass, etc.

There was lots of fun and opportunity to get better acquainted at a home meeting cutting out about 1000 paper snowflakes and making other decorations for the Christmas Dinner-Dance. They held an auction to make money for projects with the Farm Home girls. *Frugal Forestry Femmes got some good buys*, had lots of fun, and helped get their favorite project on its feet financially.

The wives saw films on forestry, and had an evening with Nellie Woodward, a marriage counselor. The year ended in April with an impressive candle light installation ceremony for the newly elected 1964-65 Forestry Femmes officers.

Pat Yunker

Officers

Sitting: Marlene Nichols, Recording Secretary; Pat Yunker, President; JoAnne Bernritter, Editor.
Standing: Pat Crowe, V. President; Joyce Stuntzner, Corresponding Secretary.
Not pictured: Charlene Southwick, Treasurer.

Officers for the 1964-65 school year:

Sally Brown ..... President
Verna Wright ..... Vice-President
Audrey Gilbert ..... Treasurer
Karen Stuart ..... Corresponding Secretary
Carol Coyle ..... Recording Secretary

CHRISTMAS DANCE

A most enjoyable evening was spent by all who attended the annual Forestry Femmes dinner dance held the Saturday of "dead week".

The Femmes had transformed the cabin into an enchanting winter wonderland with a false ceiling of dainty snowflakes, a beautifully decorated tree, and a huge wreath complete with glass balls and a bow which crowned the crackling fireplace. The cabin was alive with atmosphere! Before the dance a delicious turkey dinner, complete with all the trimmings, was served by the Femmes who had prepared the dinner in their homes.

After eating, everyone cleared the tables and chairs from the floor and made preparations for the dance. Live music was furnished by the Music Masters who played music to the liking of everyone. The friendly and relaxed atmosphere which prevailed throughout the entire evening certainly made the Christmas dance a memorable occasion and a nice way to end fall term for 1963

FERNHOPPER SPORTS

Someone once said, "All work and no play makes Jack a dull boy". With that thought in mind the Fernhoppers hung up their cruiser's vests and put away their calks to engage in intramural sports.

Fall term saw the Fernhoppers participating in horseshoes and volleyball. The shoe tossers were Tom Cutter, George Graf, Miles Weaver, Kirby Schwinck, and Mike Wirtz. The team was eliminated from further competition by losing their first match; they won four of six individual games, but lost the match by total points.

After getting off to a slow start the volleyball team played well the remainder of the season. They lost the first game, but went on to win the final three games to finish second in their league. The team members were: Jim Rombach, Dick Robertson, Terry Little, Miles Weaver, Mike Wirtz, Ron Brandt, Doug Coyle, Kirby Schwinck, and "Little" Larry Brown.

Basketball season was the main interest during winter term. The Fernhoppers fielded two teams in a strong league composed of Independents, Chem. E's, and football "jocks". The 'A' team, led by Ron Stuntzner, Cliff Perigo, and Denny Crowe, swept to three straight victories without a defeat. Mike Wirtz, Doug Coyle, and Rich W. Bowers rounded out the first team; they also played well and scored some clutch baskets.

The final two games were disastrous for the 'hoppers'. Their first loss of the season came at the hands of the Out of Staters, a team of football players. Shoulder pads and football helmets would have been appropriate in this encounter. The last game of the season, a 23-19 loss, was a riotous affair. Both teams were battling for a second place league finish in a rugged, foul-filled game. Credit should be given to a near-blind referee who seemed to have his back turned much of the time.

The Fernhopper's 'B' team finished the season with a perfect record; no wins and four losses (one forfeit). Although the players had some trouble putting the ball through the hoop, they put up stiff competition for the opposition. The players were: Kirby Schwinck, Miles Weaver, Steve Fitch, Larry Blasing, Ron Brandt, Dick Robertson, and Carroll Cropley.

Advice for future Fernhopper athletic teams: schedule pre-game strategy sessions at Price's or The Peacock.

MAC FOREST DAY — 1963

On October 12, 1963, the fourth annual Mac Forest Day was held with an estimated 100 students and faculty attending. The participation was below that of previous years. A football game and a Society of American Foresters field trip on this same day were conflicting attractions.

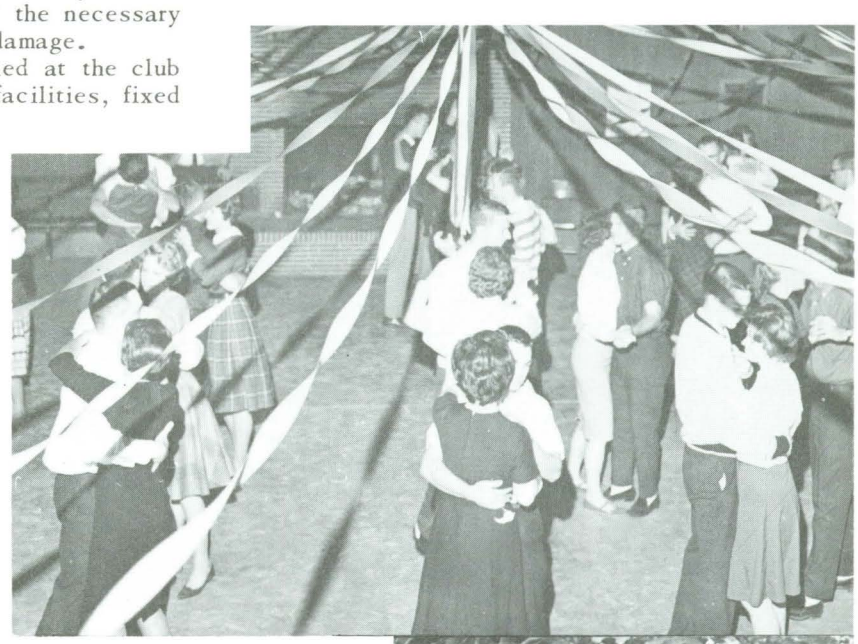
Work crews left from the School of Forestry parking lot at 7:30 a.m. and began work on the many projects in Mc Donald Forest at 8:00. Crew chiefs organized their crews and dispatched them to their respective jobs. On this first anniversary of the Columbus Day windstorm, many of the necessary jobs involved cleanup of windstorm damage.

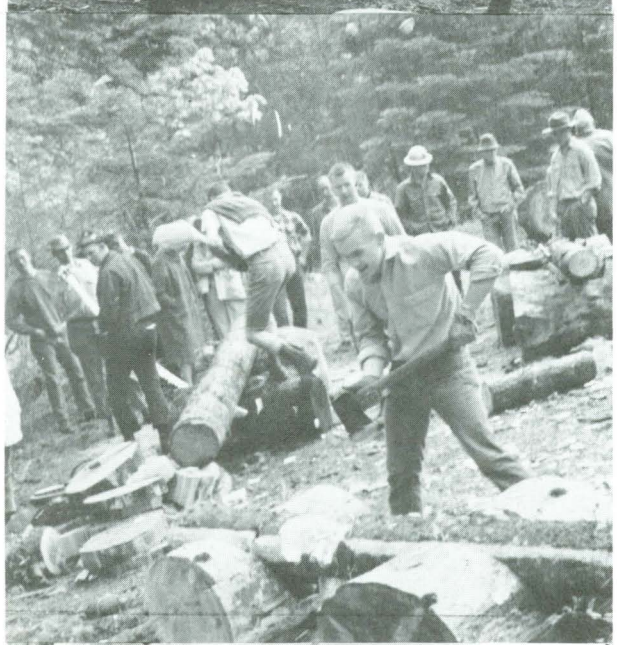
Larry Brown and his men worked at the club cabin and installed new outhouse facilities, fixed the hot water heater, strung new lights in the parking lot to replace those lost in the blowdown, and drained water from the Cabin yard.

Jim Clark, Casey Randall and crew repaired windstorm damage in the arboretum while Carrol Cropley and crew cleaned up Johnny Bell's growth study plot. Three brushing crews were organized under Frank Bernritter, John Shaw, and Steve Fitch and conducted a campaign against unwanted roadside brush. Tom Turpin's trail crew cleared brush and blowdown from existing trails.

At noon, all crews returned to the warmth of the club cabin and sat down for a fine spaghetti, tossed salad, and cake lunch prepared and served by the Forestry Femmes. I'm sure every man there was thankful for the work the Femmes put into the meal.

After lunch, a short Forestry Club business meeting was held and some Spring Thaw contest events were demonstrated at Cronemiller Lake. Everyone returned home in the early afternoon to prepare for the dance at the club cabin that evening.





SPRING

"Pullers ready?" The three-inch hawser line pulled tight; water from the fire hose began to soak the center steps of the Memorial Union and the flag which hung midway between the undefeated team of Fernhoppers and the challengers of Waldo Hall. Fernhopper coach Dave Wiley confidently eyed his team.

"Pull!!!" The line jumped as a total weight of almost three tons leaned into the task. The outcome found the outpowered Waldo Hall team through the water three times and the 1963 Spring Thaw was under way.

Saturday, under a typical Oregon sky which alternately bathed contestants in dazzling sunlight and torrential rains, almost 150 fernhoppers gathered at Cronemiller Lake in McDonald Forest to prove their skills as woodsmen. The powerful stroke and experienced eye of Bud Hadley netted him first place in the chopping event with Bert Hockett finishing in hot pursuit. Hadley also finished second in the single bucking behind the flurry of sawdust of Steve Woodard. By now the rain was pelting down; the skillful team of Ron Stuntzner and Denny Crowe had coordinated efforts to take honors in double bucking over the team of Bud Hadley and

THAW 1963

Steve Woodard and the sure aim of Mike Van de Hey netted him the prize in axe throwing. Birling saw Gary Smith, an FP man, yet, stay drier longer with Bob Thrush in soggy second place. The tricky boom quickly eleminated a long list of competitors to Lavell Craig with Larry Brown a step behind.

Even the women got in on the act with Joyce Stuntzner taking the ax throw and bucking with Pat Crowe to take top honors in that event.

Everyone then returned to the cabin and the bean feed prepared by the Forestry Femmes. Following a hearty meal the awards and scholarships were presented.

Spring Thaw was capped off by an informal dance to the western music of the Melnchucks. The Forest Frauline was crowned at the dance to begin an all-too-brief reign.

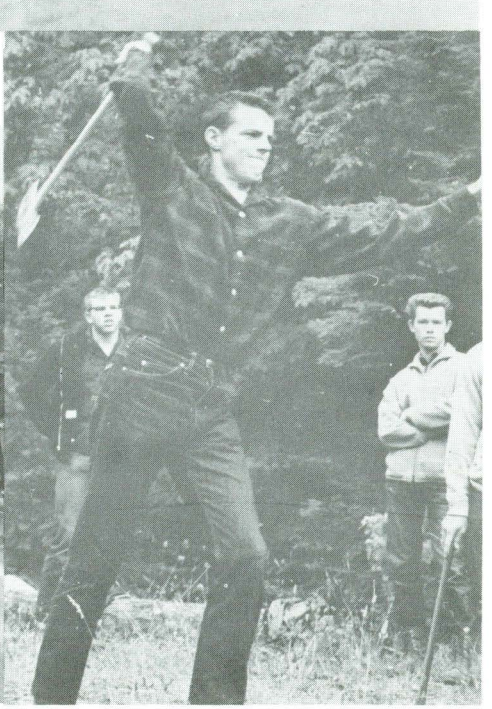
Spring Thaw Chairmen were:

General Chairmen and contests ..... Denny Crowe

Bean Feed ..... Forestry Femmes

Awards ..... Larry Brown

Dance ..... Jim Cook



AWARDS

School of Forestry Awards

FLOYD HART
James Mason
Jerry Thomas

EVANS PRODUCTS
Richard Marion

ST. REGIS PAPER
Francis Greulich

JOHN R. SNELLSTROM
Brian Cleary

POWERS MEMORIAL
Alexander Erickson

MAX D. TUCKER
John McGhehey
Dennis Dystro
Dennis Pope

SOUTH SANTIAM EDUCATIONAL AND RESEARCH PROJECT
James Booher
Michael Cooley
Phil Crawford
Theodore Kinney
Richard Robertson

AUFDERHEIDE MEMORIAL
Willis Rietveld

CROWN ZELLERBACH
Alan Defler
Ronald Stewart

AUTZEN FOUNDATION
Robert Ragon

SLATER MEMORIAL
Phil Kreiss

COLE CLARK AND CUNNINGHAM
Ronald Grant

SMITH MEMORIAL
Gary Von Smith

Spring Thaw Awards-'63

ANNUAL CRUISE CUP
Larry G. Brown

KELLY AXE AWARD
G. Lynn Sprague

XI SIGMA PI PLAQUE
Theodore R. Kenney

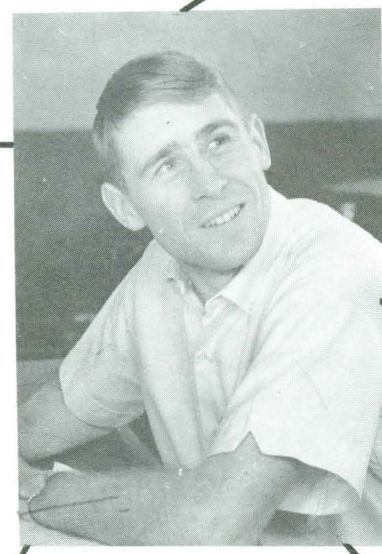
ESKEW MEMORIAL AWARD
Orval Hadley

AUFDERHEIDE MEM. AWARD
John E. O'Leary

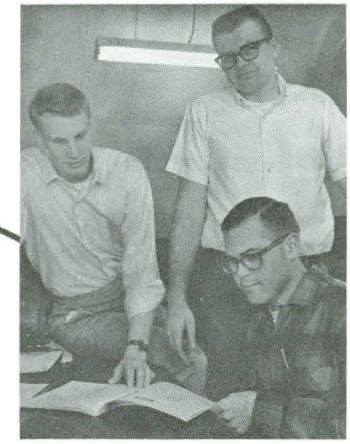
SENIOR SCHOLARSHIP
John W. Reed

Annual Cruise STAFF

D. Yunker



Cliff Perigo–Editor



K. Schnare, R. Smith, R. Stewart

S. Martin, R. Osterling– photographer, K. Humbert.

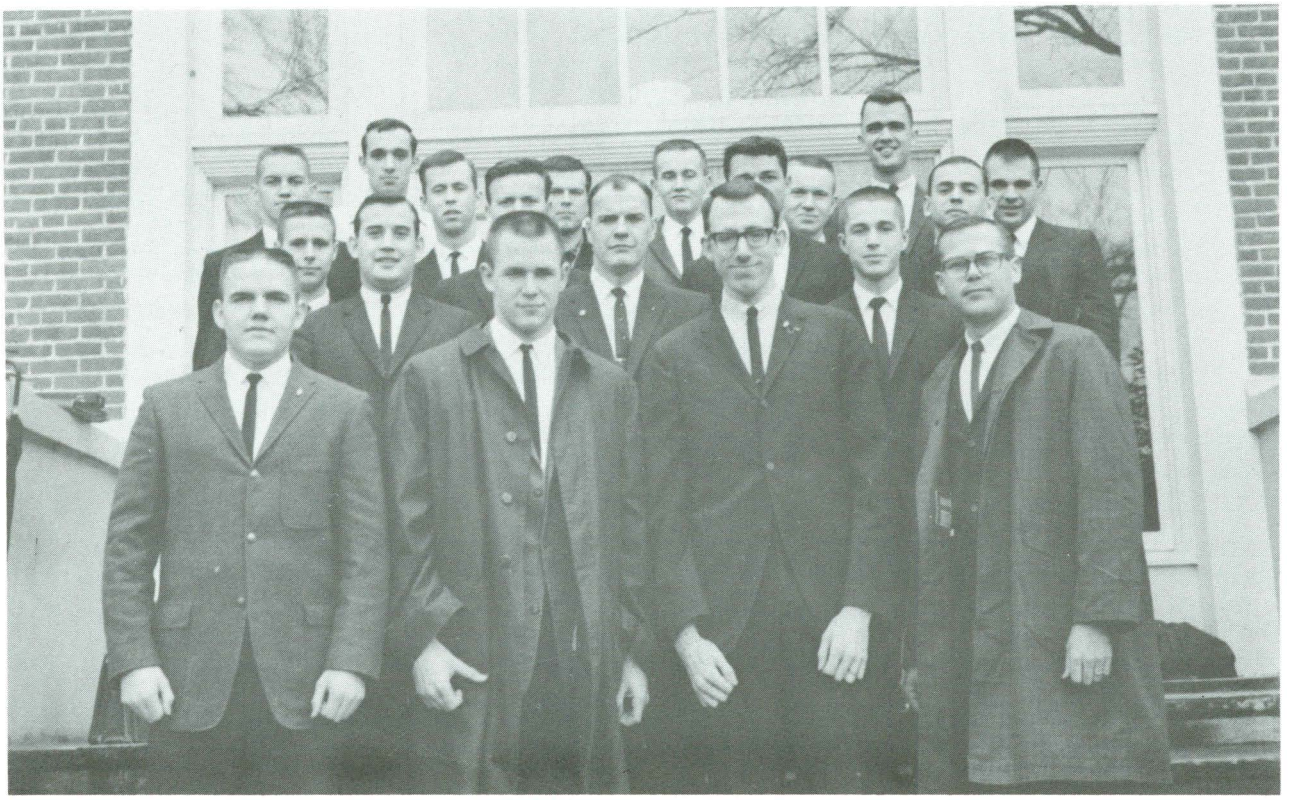
J. DeVilbliss, P. Crawford, C. Perigo, D. Crowe, R. Smith.

XI SIGMA PI

Xi Sigma Pi is the foresters' national honor fraternity and is represented in 26 forestry schools across the country. The Zeta Chapter at Oregon State was established in 1922. Implicit in its title as an honorary, Xi Sigma Pi honors the forester who has done well academically and shows promise to be successful in future forestry work. To honor, however, is not the only objective of Xi Sigma Pi. More important, this honorary works for the upbuilding of forestry and forestry education. By inspiring higher standards of scholarship and promoting fraternal relations among ernest workers in forestry, Xi Sigma Pi strives to accomplish this goal.

The merits of any organization lie within its ability to match its objectives with action. In the past, Xi Sigma Pi concentrated heavily on recognition of its members and accomplished little else. Consequently, it failed in meeting its entire objective and was generally felt by many people to be a "do-nothing organization". Early this year, positive steps were taken to make Xi Sigma Pi most active. A general modernization of initiation proceedures, simplifying and emphasizing objectives, was made to guide both newly elected initiates and members toward active roles in the goals of Xi Sigma Pi. Discussion groups of faculty and student members were organized. These groups are meeting twice a quarter to discuss pertinent topics such as tests and testing objectives, the curriculum, and the counseling system. With other projects being planned, Xi Sigma Pi has come a long way towards accomplishing its goals this year.

Xi Sigma Pi office titles and duties resemble those of any other active organization, differing in name. The president is known as the Forester and presides and guides the organization. The vice president is known as Associate Forester, the secretary is known as Secretary-Fiscal Agent, and the sergeant-of-arms is known as Forest Ranger. Adviser, Jim Krygier and officers John Flanagan, Forester, Dick Robertson, Associate Forester, Phil Crawford, Secretary-Fiscal Agent, and Ron Stewart, Forest Ranger guided Xi Sigma Pi through this year.



Front row: **P. Crawford, D. Robertson, J. Flanagan, R. Stewart.** Row two: **L. Lyman, T. Erickson, F. Greulich.** Row three: **J. Booher, R. Bobbett, G. Thomas, K. Neisz.** Row four: **B. Ragon, J. McGhehey, M. Cooley, T. Kinney, T. Hinthorne.** Row five: **G. Smith, J. DeVilbiss.**

WHAT IS A FORESTER

by J. Herbert Stone
Regional Forester
Region 6, U.S.F.S.

What is a forester? Many people visualize him as an outdoorsman, concerned principally with putting out forest fires or having something to do with the cutting of trees. He is frequently not recognized as a professionally trained individual, with knowledge of plant growth and the engineering problems of harvesting a crop. Few consider that a forester needs to be adept in the art of human relations. But let some management practice applied in the forest adversely affect an individual's personal interest, and he becomes a target for acid criticism.

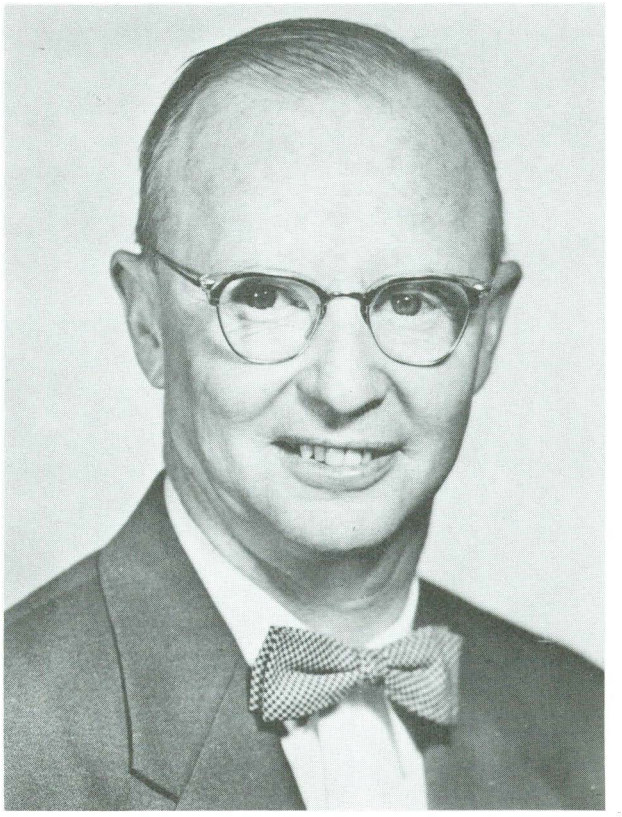
The forester must deal with many variations in forest conditions and with many different interests in the forest. He must draw upon not only his own knowledge of the field of professional forestry but on the skills of people trained in other fields, such as engineering, recreation and human relations. Proper use of all these skills is essential to a good forest land management.

Forest Service Chief, Edward P. Cliff, has pointed out that "Foresters of today and tomorrow must understand and use the social, economic and political forces as skillfully as they manipulate the biological factors of soil and water and flora and fauna.

"This widening and deepening of forestry has special significance for young foresters and students. Even now, the Forest Service uses some 70 distinctly different classifications of professional jobs! This proliferation of activities included under the broad blanket of forestry clearly indicates increasing needs for highly specialized men with greater individual alertness in narrow fields of interest. But, at the same time, the need for integrated management of all forest resources calls for skilled men to guide and synthesize the many inter relationships associated with the forest complex."

These skilled men must also attack the problem of lack of public knowledge of forestry and foresters. Richard E. McArdle, former Chief of the Forest Service, in speaking of the dearth of public notice of forestry, said: "In part, this is because foresters must deal largely in terms of a distant future. Problems of immediacy get the attention and the money. Problems of the future compete poorly. But compete we must. To compete effectively we must make the public understand its dependence on forests. This is another of the great challenges in natural resources—the competition for public understanding."

Foresters indeed must broaden their horizons and realize that their responsibility embraces planning for the integrated development and management of all the resources of the forest. They can do this most effectively by drawing on the various skills that may be necessary to make and carry out multiple use plans. The broader concept must be recognized and understood not only by the forester but also by the people of the country. As a matter of fact, the future of forestry as a profession, as well as the future of resource management by professionals, may well depend upon whether we achieve understanding of this concept and of our abilities in this field. I am convinced that the professional forester is best suited by his education, philosophy and experience to provide the leadership in planning and promoting coordinated management of all of the forest resources. A forest technician cannot do the job, nor can the professional conservationist who has breadth but not depth to his training. If the forester is to fulfill his role adequately he must be broader than his predecessors.



J. Herbert Stone

Professor Wyman of the University of Connecticut has said: "He must understand not only his professional and technical requisites but his responsibility to the society of which he is a part."

The forester must be aware of the growth of the country and of changing interests. He must recognize that most problems have many aspects. The role of the manager is to make adjustments or modifications of use to provide the largest sum total of benefits to the owners of the property he is managing. All owners must be concerned with the public values of property which they possess. Public values cannot be ignored in any coordinated management program. In this way will the forester find a strong spot in the social and economic life of this country and in this way he will contribute to the basic principle of managing these great resources for the greatest good of the greatest number of people in the long run.

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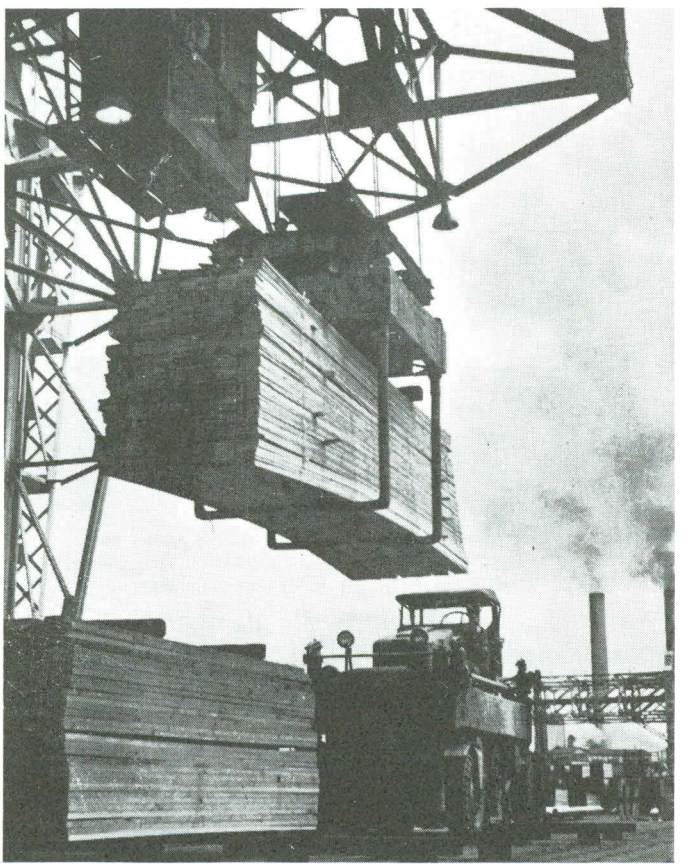
RECREATION IN SOUTHEASTERN BRITISH COLUMBIA

by Bob Harrison
Sr. F.M.

In the southeastern corner of British Columbia – west of the Rockies, east of the Okanogan – is a vast empire of mineral, forest, and agricultural wealth set admidst some of nature's greatest riches of scenic beauty, blue mountain lakes, tumbling streams, plains and mountains, fish and game. This huge playground and industrial area is known as the Kootenay-Boundary area. It is a rich area that is developing more quickly now than at any time in its short history. The Kootenay-Boundary offers vast opportunities for pleasure and entertainment in outdoor recreation.

Main industries in the Kootenays are those arising from the development of the abundant natural resources in the area. They are mining and smelting, chemical and fertilizer production, lumbering and sawmilling, pulp and paper, and the production of hydroelectric power. Agriculture is limited by terrain, but is an important economic factor in certain localities.

With the vast number of parks, lakes, and mountain terrain, one can see that the recreational advantages in this area are great. The main outdoor recreational advantages of the Kootenay-Boundary are camping and hiking, water sports, fishing and hunting, and most winter sports. At the present time there are 14 roadside campsite and picnic areas which have been built and maintained by the Department of Recreation and Conservation of British Columbia. These campsites range from the smallest, with 12 units at Lockhart Beach on Kootenay Lake, to Wasa, north of Kimberly with 104 units. Each park has overnight facilities: tent space, tables, fire places, a spot to park the car, electricity and water facilities for trailers, and central shower and washroom facilities. At the present time the Department of Recreation does not charge campers for the use of the parks. The only stipulation is that the campers do not remain in any one area longer than five days. Most of the parks are located along the main highways near scenic lakeshores which offer swimming, boating, fishing, and water skiing. In addition to the overnight facilities, there are numerous roadside rest areas which are located



at points of interest and areas of scenic value. Some of these areas include the Glass House, built of embalming bottles, on the Kootenay Lake, the power dams along the Kootenay River, and the ghost town of Sandon in the Slocan Valley.

The mountain terrain in this area offers plenty of opportunity for people who like to head off into the wilderness on their own. Located in the high, rugged country between Nelson and Kaslo, Kokanee Glasier Park abounds in beauty and game and offers many challenges to mountaineers and trail riders. The area is not yet accessible by good road, but future plans include better access to the area. In this high alpine country there are four lakes above the 8,000 foot level and the typical alpine rock formations and glaciers. It is truly a mountaineer's and photographer's paradise. Other high mountain areas similar to the Kokanee Glacier Park are Mount Assinabone and Elk Lakes Park in the east Kootenay. Each year more and more visits are made to these parks to photograph their alpine beauty and to scale their ice cliffs and jagged peaks.

The area offers countless miles of trails into mountain lakes and streams for the person who just wants to get away from the bustle of every-day life for a few days. Most of these trails were built during the late 1800's and early 1900's when mining activities were in full swing. Since then the trails have been maintained by the British Columbia Forest Service and the Department of Recreation and Conservation.

With the many lakes in the country water sports are high on the list for outdoor recreation. The two main bodies of water are the Kootenay Lake and the Arrow Lakes which are fed and drained by the Columbia River. In addition to these bodies of water, other lakes of significant size for water recreation include Christina Lake, Slocan Lake, Moyie Lake and Wasa Lake. All of these are very heavily visited during the summer for water skiing, swimming, and sun bathing. Each lake is well developed to accomodate people of all ages with all interests. Boat launching ramps, marine stations and boat rentals are among the facilities available for the water recreationist. Campsites and picnic areas are also very common at each of the lakes.

Hunting and fishing have always ranked high in the Kootenay-Boundary area. Hunting was always good in this area, but during recent years it has been even better due to modern game management practices and natural factors. The Kootenays offer a variety of prey for the keen hunter. Big game species such as elk, moose, mountain goat, bighorn sheep and caribou are plentiful and can be found in almost any part of the country. Each year many big game trophies are taken out of the area, which include the famous silver tip grizzly bear. As well as the big game animals, small game species such as white-tail and black-tail deer, cougars, black and brown bear, and the vicious bobcat can be hunted in the area. For the hunter who enjoys hunting birds all northern species of ducks, the famed Canada goose, grouse, and pheasant are offered in the area.

The Creston Flats, at the head of the Kootenay Lake, offer some of the best water fowl hunting in the fall of the year. This particular area is a stopover for the northern flights of ducks and geese on their way South. Higher up in the foothills of this same area is excellent pheasant hunting. East of Creston toward the Rocky Mountains lies some of the best big game hunting in the world. Moose, elk, and deer are very abundant in this area. In the Nelson-Lardeau area the grizzly, white-tail deer, and cougar are found.

The Kootenays offer almost every type of fishing there is. There is fly fishing, trolling, and spin casting; something to suit the fancy of any fisherman, expert or amateur, young or old. Kamloops and Rainbow trout are caught in the Kootenay and Arrow Lakes. These are not small fish either, for they run up to 25 pounds. For the angler who is out after the real big ones, huge sturgeon can be caught in the Kootenay River. Most of the streams in the area are well stocked with cutthroat and brook trout species for the angler who likes the thrills of stream fishing. Most of the mountain lakes in the area are accessible by car or a few miles of easy walking. These lakes offer a fisherman's paradise for they are extremely well stocked with fine trout.

All in all, the Kootenay-Boundary offers unsurpassed sport fishing. Fast water or quiet water, it is all there for the fly fisherman; and for the angler who likes to tow a line behind the boat.

During the winter months the Kootenays offer many winter sports. Skiing, ice skating, hockey and curling are among the most popular winter sports. Major ski hills are located at Fernie, Kimberly, Nelson and Rossland. Each of these locations has lift and lodge facilities and is located just a few miles from the above mentioned cities. Rossland is the home of the famed Red Mountain ski development which produces most of Canada's Winter Olympic skiers. Excellent jumping hills are located at Nelson and Revelstoke. The jump hill at Revelstoke, one of the largest in the world, is where many of the Olympic ski-jumping trials have been held. Fernie and Rossland were considered in British Columbia's bid for the proposed site of the 1968 Winter Olympic Games. Other communities that are developing ski hills and will have facilities completed or nearly so in 1964 are at Nakusp on the Arrow Lakes and Salmo, midway between Nelson and Trail. Other projects that are under way are at Grand Forks, Cranbrook, Castlegar, and the Windermere Valley.

Trail, Rossland, Nelson, and Cranbrook each offer artificial ice skating and curling rinks. During the winter months ice hockey is a very popular sport with the people in the area. Curling championships are played during the winter at each of these rinks every year.

In summary, I feel that it would be difficult to imagine a more exciting area in which to spend a vacation, for the valleys are wide and open, the mountains steep and rugged, and the lakes are large with warm sandy beaches. This country is not only for the ardent fisherman, the big game hunter, or the mountaineer, but also for the hiker, artist, photographer, and the family man.

THE FIRE CONTROL SIMULATOR

Realism has long been a key word in training fire control officers. Not until December, 1962, had a training device provided sufficient dynamics, realism, time pressure, and active trainee participation. At that time a Fire Control Simulator was unveiled and shown to U.S. Forest Service personnel.

The simulator was conceived and developed by the Division of Fire Control of the Forest Service, Department of Agriculture, Washington D.C., working with the International Electric Corporation of Paramus, New Jersey.

The Simulator Elements

Training Enclosure

The structure is a 30 foot by 24 foot portable bell-shaped enclosure made of wood panelling with a waterproofed canvas roof. The specially-built, reversible panels are flame and water resistant.

The training area is equipped with four work tables in clear view of an 8x12 foot curved screen. Each table is set up with a complete communication system which includes: public address, intercom, telephone, ground-to-air, and ground-to-ground contact.

Control Area

At the rear of the structure is the control area which is elevated above the floor. Within this area are three mirror-bounce projectors that provide the realism which characterizes the simulator. The center projector projects any desired background scene on which the fire is "fought". Smoke and flame are reproduced by the other projectors. Opaque plates revolve on belts under the projectors; by scribing the opaque material the realism of a burning fire is produced. The fire perimeter can be made to move or spot.

Two additional gimbal-mounted projectors are used to flash symbols such as trucks, aircraft, firecrews, and 'cats' on the screen. Color slides provide close-up views of the forest cover for trainee orientation.

Beneath the projection booth are three desk areas with complex communications equipment, light controls, and training aids. Tape recorders are available to reproduce background sounds or to record discussions and orders for later review.

The most important element in this training exercise is the training team and the program they produce. The team members should have a well-rounded background in fire control. They must also have good speaking voices and the ability to make realistic decisions in response to orders from the trainees who are combating the blaze.

The key man on the training team is the Umpire-Director. He provides guidance to the operator producing the simulated fire, determines the competency of all actions, and grants success or failure based on his own experience and knowledge. Other team members play the roles of the pilot in the borate planes, the men on the fire lines, or anyone else the fire boss might need to combat the blaze.

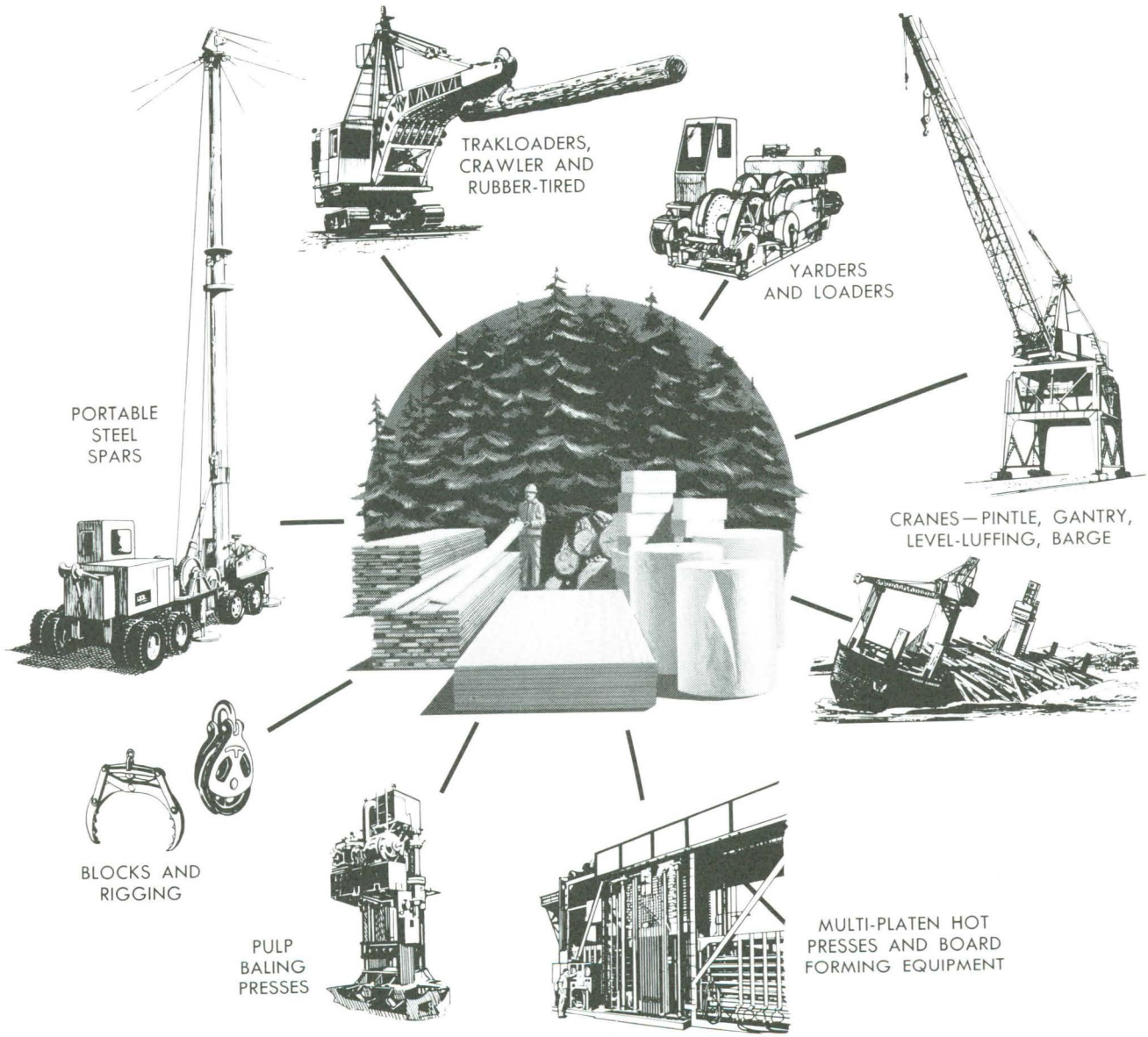
The Training Exercise

During an actual exercise twelve trainees are seated at the four tables facing the screen. One has been appointed fire boss, while the remaining trainees make up his staff.

An aerial view of a woodland area is projected on the screen at the start of the exercise. A fire of almost any type or stage is then projected onto the realistic background. The umpire then informs the trainees of weather conditions, types and amount of fuel in the path of the fire, and other pertinent factors.

(Cont. Page 49)

(Photo- U. S. Forest Service)



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A NEW BREED OF LOGGER

by William D. Lyche
Graduate of 1960

As the stands of old growth diminish, the timber industry turns toward a second-growth economy and higher utilization standards. These changes bring about more intense management accompanied by the thinning of second-growth stands, the salvage of fire and insect damage, and salvage of seed trees left on clear-cuts. Being able to log salvage and thinning material, with a minimum amount of damage to the residual stand and a maximum amount of production, requires a special breed of logger and specialized logging equipment. It is now more important than ever before that the logger and forester understand and communicate in order to enhance good forest practices and make the logging show economically feasible.

This new environment requires more of the logger than just the logging know-how that would be required in clear-cut operations. He must now possess or have the desire to gain knowledge of some of the basic forest practices. Much of this knowledge could come from the forester. It must be explained to the logger the exact end result desired by the forester. He must explain how these results would best be obtained from a forestry point of view, and he must explain why certain practices would be desirable or undesirable. The forester can also help the logger by keeping him informed as to articles, publications, meetings, and field trips that would be informative in salvage and thinning logging. Along with the information provided by the forester, the logger must keep himself informed on the latest developments in logging equipment and in logging methods that would enable him to better perform his work.

The task of understanding and communication is only half completed with the knowledge gained by the logger, for the forester must take it upon himself to understand the environment and problems confronting the logger. He must inform himself of the tools and equipment used in logging and their capabilities and limitations. The forester must have a good understanding of logging costs if a fair a fair stumpage or contract price is to be determined. It is important that the logger operate at a reasonable profit while maintaining the quality of work the forester requires. If the logger is not operating at a profit, he must cut corners at the expense of the residual stand. But if logging costs are too high or if too much damage is done to the residual stand, it would be better if no logging were done. As a general rule, in this type of logging the value of the residual stand far exceeds the value of the material removed.

The forester must know his management plan well and be able to communicate this plan to the logger. It must be shown and understood by the logger how he fits into this management program. He must realize that he is not a necessary evil but rather an important part in the forest management process, and that his cooperation and knowledge of forest practices are necessary to make the management plan work smoothly.

Because of the small size of his operation the logger is daily confronted with business transactions. He must have the ability to keep his own books and cost records and then analyze these records to determine the most profitable method of production. He will have to compile and comply with many federal and state forms and reports. He must have a knowledge of the mathematics of finance so that there will be an intelligent planning of equipment and supply purchases. This type of specialized logging requires a specialized crew. These men must be informed by their employer as to some of the basic forest practices and objectives so that a better job of logging can be done. Because of the small size of the operation, these men must have the ability to perform a variety of jobs so they can fill-in where needed to attain maximum production.

When thinning and salvage logging was started, the logger utilized the equipment that was available. As time went on he realized that changes in design were necessary to reduce damage and increase production. As a result, new machines are invading our forest land. These machines must be fast to yard long distances or small volumes per acre. They need to be mobile to enable them to move often with little set-up time. They need to be versatile in order to handle the small logs of a thinning show or the large logs that might be encountered on a salvage show.

The first interest of the forester should be to obtain the greatest amount and best quality of wood possible from his timber land, while protecting the residual stand from damage, so that profits are at a maximum. The logger, also desiring maximum profit, must first be interested in production. If each will work in cooperation and try to understand the problems of the other, these goals should be easier to obtain.

FOREST RESEARCH AT OREGON STATE

by Bill Rietveld, Sr. F.M.

Forest research occupies an important position in the overall professional picture. Perhaps nearly every individual concerned with the forest industry is interested in developments arising from forest research. Through the contributions of forest researchers, the practice of forestry has evolved from an art to a science.

Forest research is oriented toward the perpetual maximum quality production from our forest lands. A closer synchronization of multiple use concepts is a parallel objective. Fullest utilization of material harvested from the forest is an essential objective in the field of forest research.

Forest research at O.S.U. is closely correlated with the needs of the forest industry. Cooperative research with the industry has become an important part of the program. And, since research is largely supported by the industry through severance taxes and the like, industry representatives have a strong voice in delineating the areas of research emphasis.

The Forest Research Laboratory and the Forest Science Department have comprised the Forest Research Division of the Agricultural Experiment Station of Oregon State University since July 1961. This union has benefited forest research through cooperative research efforts with other branches of the Agricultural Experiment Station.

The principal function of the Forest Sciences Department is basic research. The Forest Science Department represents an important link between research developments and the college student.

The Forest Research Laboratory is divided into the Forest Products and the Forest Management sections. The primary activity of the Forest Research Laboratory is applied research, although some basic research is included in the program. The Forest Products Section has close association with industry problems. Frequently staff members are asked to discuss specific problems and to participate in cooperative programs with private forest landowners.

The Forest Management Section is engaged in problems concerning improvement of methods used in producing a crop of timber. Qualified full-time research men work to alleviate problems encountered in all stages of production.

Research carried on at the Forest Research Laboratory is principally applied research since the laboratory is supported chiefly by the industry's severance tax. Advisory committees composed of men from trade and professional concerns and public and private landowners exert a strong influence on the nature of the studies. The advice and recommendations offered by these committees are invaluable in formulating a well-balanced and effective research program.

Research in management of forests and subsequent utilization of harvested material are inseparable counterparts in the advancement of the largest and most important industry in Oregon.

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*less bar and chain. Saw complete with bar and chain weighs as little as 14 pounds. It's available with 12, 16, 20 and 24 inch cutter bars.

HOMELITE XL-12

FIRE CONTROL SIMULATOR

(Cont. from Page 43)

As the fire progresses, the fire boss, aided by the necessary data, instructs his staff on what action to take to fight the blaze. The Umpire-Director decides wheather or not the right steps were taken.

The exercise permits the Forest Service to train personnel to act under stress and provides data for evaluating a man's performance under fire conditions. The trainees also gain experience in interpreting information, planning attack strategy, and directing force exercises.

The exercises are aimed at preparing command personnel in handling risks, uncertainties, threats, and normal or unusual fire behavior. By using the simulator effectively the trainees gain experience in: sizing up the fire, planning suppression strategy, making decisions as the fire situation changes, directing forces, and evaluating decisions.

Following the exercise a debriefing of the trainees is led by the instructional team. This session enables trainees to examine their performance and and analyze both strong and weak fire control decisions.

Outlook

Gaining actual experience on forest fires requires long years of hard work. During this time planned instruction and guidance is limited to on-the-job training. It is felt that the simulator will provide worthwhile training exercises to broaden the background of fire control personnel under realistic surroundings.

by Mike Wirtz Sr. F.M.

WEDGE PRISM SAMPLING

by John Bell
Associate Professor -- F.M.

It is evident from the variable plot cruising short courses conducted by O.S.U. that the use of this method of sampling continues to increase at a rapid rate. (Nearly 400 foresters from Western United States and Canada have participated in these short courses.)

"It is not true that the adoption of prism cruising will automatically result in improved accuracy with no increase in cost. Carelessness and ingorance are not abolished by the new methods, and many instances of poor estimating have already been observed where prisms have been used." [1]

With this thought in mind it may be profitable to review a few of the items pertaining to wedge prism cruising.

There are three major reasons for using variable plot sampling.

First, it is simple to use, therefore, personal error is reduced. The objective in any cruise is to obtain the most accurate answer for a given expenditure of time and money. Little is gained in reducing the sampling error if personal error is not correspondingly reduced. Because plot boundaries or strip widths do not have to be determined, because the importance of the diameter variable is reduced and the number of trees to measure and tally is considerably smaller, it is possible to spend more time in obtaining better height, defect and grade estimations.

Second, in variable plot sampling the probability of tree selection is proportional to tree basal area. Thus, there is a batter balance between trees of large and small diameter sampled in a stand than in fixed-area cruising. This means that there is a better sample of the larger trees which are more variable in height, defect, and quality.

Third, observations may be made on the trees, well above the variable butt swell, where taper is fairly uniform. Thus, it is not necessary to determine form class when using form class tables if the trees are observed at the top of the first 16-foot log. This is particularly important in Western Oregon and Western Washington. By selecting the appropriate volume – basal area ratio table, volume per acre may be determined either on the basis of 16-foot logs or 32-foot logs. If the cruise occurs on sloping terrain, it is recommended that semi-circular plots (a 180° arc always taken on the down-hill side) be used. When semi-circular plots are used a prism with one-half the basal area factor that would have been used for a full plot is selected. Thus, approximately the same tree count is obtained from a semi-circular plot as from a full plot.

Some precautions that should be taken in wedge prism sampling are as follows:

(1) The wedge prism should be held over the sampling point, instead of the cruiser standing on the sampling point.

(2) Extreme care should be taken in handling the tree that approaches the borderline case. (Carefully correct for slope and be sure that the prism is being held perpendicular to the line of sight).

(3) Normally, the observation point on the tree must correspond with the diameter in the volume-basal area ratio table that will be used in determining volumes.

(4) The criterion for determining merchantability of "in" trees must be the same at all sampling points when diameters and heights are recorded for only a proportion of the points.

In summary, the main advantages claimed for variable plot cruising are that it is simpler, saves a substantial amount of plot and computation time without sacrificing accuracy, reduces personal errors and provides a better balanced sample of the various diameter classes within the stand.[2] Thus, variable plot sampling makes it possible to obtain a more accurate answer for a given expenditure of time and money.

[1] Bruce, Donald. Prism Cruising in the Western United States and volume tables for use therewith. Mason, Bruce and Girard. Portland, Oregon 1961.

[2] Dilworth, J.R. and J.F. Bell. Log Scaling and Timber Cruising. Corvallis, Oregon: O.S.U. Book Stores, Inc., 1964, p. 255.

THE SMALL-FOREST OWNER

by Robert F. Keniston
Professor – F.M.

"Sheep and goats are better company than trees." This was one forest owner's answer to the question often asked by foresters, "Why don't small-forest owners practice better forestry?" (Is it normal for forest owners to feel, think, and act like human beings instead of like the "economic man"?)

Charles H. Stoddard in 1950 made the following comment about the lack of success of public programs directed at improving the management of small private forests (3):

> *It is said that our present efforts are insufficient, more foresters are needed in the field to contact more owners; more film, slides, and pamphlets are required, etc. No one ever asks why more of the same dosage is prescribed when the patient has not shown much visible improvement. Perhaps it is time to do a little research on the doctor, on the medicine, and on the patient.*

In an attempt to learn a little more about Stoddard's "patient" – the small-forest owner, and *why* he does what he does, 122 small-forest owners in western Oregon were interviewed in 1959 and 1960. It was evident that few previous studies had paid much attention to the forest owner as a person. Yet most forest owners are people. Those that aren't (corporations and associations) are managed by people. Gaining an understanding of the reasons for a forest owner's actions and decisions involves studying his total situation, his personality traits, his objectives and interests, background, abilities, limitations, and his motivations. So this study attempted to determine (1) what situational, personal, and economic factors appears actually to influence small-forest owners' management decisions, and (2) how these factors influence land use and forest management. A special effort was made to learn about each forest owner from *his* (or her) point of view.

Each interview was an informal interview-in-depth. It consisted of getting the owner into a conversation about himself, his land, and his forest, and encouraging him to tell about these and his objectives, management, problems, plans, and ideas, preferably using an historical approach. This was not difficult, because most people like to talk about themselves, their experiences, and their ideas. An effort was made to obtain the desired information in the natural course of the conversation, with the interviewer asking only such questions as fitted in naturally with the conversation or were needed to open up discussion of points not brought out by the owner.

When one owner was asked if he would be willing to answer some questions about himself and his forest management, he stated, "You can ask the questions; but I won't promise to answer them." After two hours of conversation and looking around the woodland, the interviewer said, "I don't believe I have any more questions." This evoked the exclamation, "Questions!?! You haven't asked me any questions yet!" Nevertheless the investigator

had obtained over 40 specific items of desired information. This information was written down on a questionnaire form a few minutes after the investigator drove away from the owner's house.

During each interview and tour of the forest area the investigator made mental notes and ratings, but no written notes. Only after the interview was completed were the notes and observations recorded.

One type of information difficult for the investigator to obtain realiably in the interview had to do with personal traits, qualities, habits, and situations of each forest owner. Ratings on these personal factors, therefore, were made by the county agricultural extension agents and by 32 "community consultants" recommended by the county agents. The personal characteristics rated by the consultants were (1) progressiveness, (2) participation in constructive community activities, (3) business ability, (4) financial status ("net worth"), and (5) energy. Each of these characteristics was found to be positively and significantly correlated with the quality of an owner's forest management.

Quality of forest management was measured in five ways: (1) from the silvicultural or technical viewpoint; (2) stage of adoption of intensive forest-management practices; (3) degree of attainment of owner's management objectives; (4) unexploited opportunities for profitable investment of time or money; and (5) portion of forest area in productive timber use.

Quantitative measures or ratings were used for over 25 characteristics of the owner and his tract, as well as the five measures of level of forest management. Where there was no other obvious quantifying system for a characteristic, the following five-point scale was used:

5. maximum or optimum
4. above average
3. average
2. below average
1. minimum or poorest

It was found that owners who rated high in level of forest management also tended to rate high in certain 'personal characteristics and had forest property with favorable characteristics. Likewise, owners who rated low in level of forest management tended to rate low in certain personal characteristics and their tracts had less favorable characteristics.

The following characteristics, habits, and situations of forest owners were found to be highly correlated with level of forest management. They are listed in descending order as to degree of relationship with timber management:

Owner's interest in forestry
Planning horizon (length of planning period)
Portion of owner's income which is from the forest
Progressiveness
Frequency of consultation with agricultural scientists or foresters
Participation in constructive community activities
Business ability
Financial status ("net worth")
Energy ("drive")
Initiative in past cutting
Owner's membership in farm or forestry organization
Imagination (constructive)

Tract characteristics highly correlated with level of timber management, listed in descending order of degree of relationship were as follows:

Condition of forest
Stocking (portion of forest area in productive timber use)
Douglas-fir site index
Ratio of sawtimber area to total forest area
Ratio of forest acreage to total acreage
Total acreage
Forest acreage

(Cont. on Page 65)

ALSEA WATERSHED STUDY

Hal Pearce
Research Assistant

The Alsea Watershed Study was begun in July 1957 to learn how to obtain maximum productivity of a river basin for the greatest public good. Specific objectives of the investigation are:

(1) To determine effects of forestry, mining, industrial, agricultural, municipal, fishery, game, recreational and other practices occurring on the watershed upon quantity and quality of water for all uses.

(2) To determine, by experimental studies, management practices which will avoid or minimize damaging effects of current land and water practices to aquatic resources.

(3) To ascertain if land and water practices can be modified for necessary water resources in the watershed and to evaluate various modified management practices on a demonstration basis, particularly as applied to the watershed as a whole.

(4) To ascertain limits above which separate interests involved in the basin would be operating to the detriment of the other water use needs.

(5) To increase, by demonstration, a public understanding of the interrelationships between all natural resources.

The watershed study was initially assigned to the Governor's Natural Resources Committee. In July of 1957 the study was transferred to Oregon State College, becoming a responsibility of the Agricultural Experiment Station. In 1962 the School of Forestry entered the project.

Many agencies are cooperating in the watershed study. Among these are the Public Health Service, U.S. Geological Survey, U.S. Forest Service, Bureau of Land Management, Soil Conservation Service, Oregon State Game Commission, Oregon State University, and Georgia Pacific Corporation.

The U.S. Forest Service, Oregon State University, Bureau of Land Management, and Soil Conservation Service have completed an intensive soil-vegetation survey of the basin. The U.S. Forest Service will study soil compaction following logging.

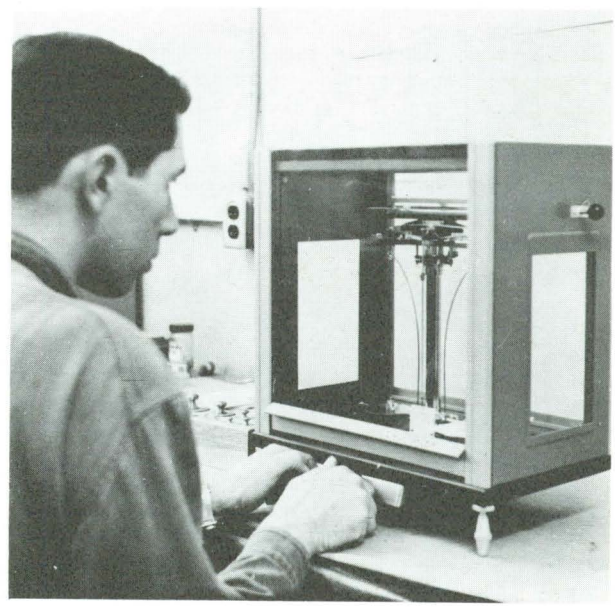
The study area for the logging-aquatic resources portion consists of three tributaries of Drift Creek (Deer, Flynn and Needle Branch). Each of the three watersheds will receive a different type of logging treatment. Deer Creek, approximately 800 acres, will have three cutting units. Needle Branch, approximately 160 acres, will be completely clearcut. Flynn Creek, approximately 500 acres, will remain uncut as a control.

Fish traps, recording rain gages, and stream gaging stations have been installed at the mouths of the three watersheds. The fish traps are maintained by the State Game Commission to provide an accurate count of fish movement in and out of the study area.

The Game Commission and the Fish and Game Department at OSU are studying the insect and algae production, spawning behavior, fish survival and migration, and characteristics of spawning areas. The stream gaging stations are maintained by the U.S. Geological Survey to provide records of stream-flow, sediment production and stream temperature.

Under the direction of Professor Krygier the School of Forestry undertook the mapping of the three watersheds, and arranged the logging treatments. Within Deer Creek, stream gaging stations have been established to determine changes in runoff and sedimentation patterns occurring after logging. Throughout the year the stream gaging stations are visited once a week to change charts and take water samples. The water samples are analyzed for suspended sediment load, concentration of dissolved salts and acidity. During storms an hourly sampling schedule is followed to accurately determine sediment production for the duration of each storm. Once a month a set of water samples is taken for a more complete chemical analysis by the Public Health Service.

A network of temperature stations has been established, by the School of Forestry, within the three watersheds to ascertain the effects of logging on stream temperatures. A weather station has also been set up by the school to provide basic meteorological data.



Determining the weight of sediments in a water sample.

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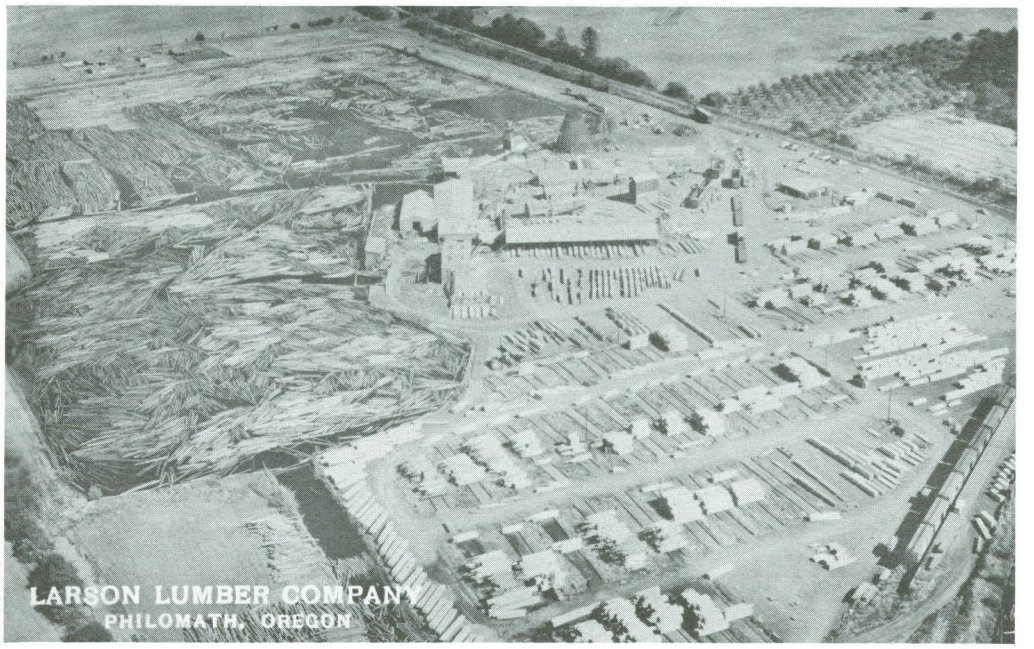

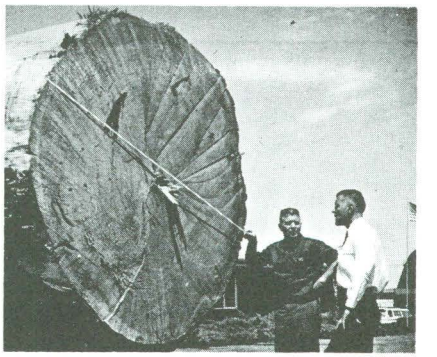

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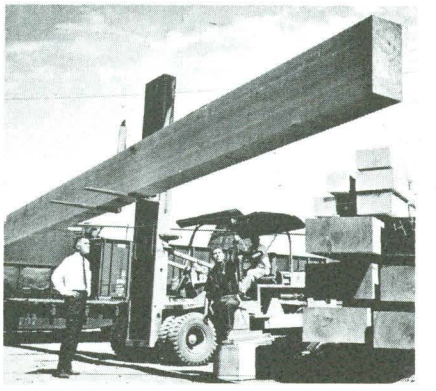

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A BRIEF OUTLINE OF THE SUMMER NSF PROGRAM

by Curt Paskett
Sr. F.S.

Near the end of every school year, the School of Forestry works in conjunction with the National Science Foundation in selecting students and providing funds and materials for undergraduate research. Each student selected by the program works under the guidance of a professor or researcher in some form of original research which is of interest to both. The students which participated in last summer's program included Steve DeKeijzer, Bill Rietveld, Ron Stewart, Jerry Thomas, Brian Cleary, Ron Grant, and myself. The respective projects included the effect of a charcoal germinative medium on germinative rate, the effect of growth promoters on seedling growth, the effect of stratification on subsequent growth rate, a comparison of the chemical methods of measuring light intensity, a study of the climatic conditions of a research area, an iodine crystal method of measuring fibril angle, and the effect of a transpiration inhibitor on the degree of stomatal aperture and rate of transpiration of seedlings. As I am most familiar with my own project, I will describe it in an attempt to give a more definite idea of the depth and scope of our summer activities.

The assessment of water metabolism in plants is important in that it is an indicator of the function and condition of plant regulatory organs. My main concern was with the effect of a transpiration inhibitor upon Douglas-fir seedlings. Could a technique be devised in which stomatal aperture and transpiration rate be measured? Would chemicals have a measurable effect upon this rate? The answers to these questions involved both a long visitation to the library discovering what others had done in the past, and modifying these techniques to the purpose at hand.

It is possible to measure transpiration either by recording the moisture relationships in a closed chamber surrounding the plant or weighing plant water losses upon a delicate balance. Either method may or may not involve severance of the leaf to be studied from the main stem. Due to the lack of equipment for a hygrometric measurement of transpiration, I relied upon the more tedious but also more accurate gravimetric technique.

Several variations of techniques were attempted in weighing moisture losses. The first and most obvious method was to simply sever the seedling from its root system, place the cut plant upon the balance pan, and record the weight loss at regular time intervals, assuming the weight loss to be transpired moisture losses. However, the rate of transpiration was characterized by a rapid, abnormal increase, probably due to a sudden decrease of water tension within the conductive capillaries of the stem and needles. Within half an hour, the availability of

water was decreased and transpiration had ceased. In an attempt to nullify the effect of severance of the root system, the cut stub was blocked with warm paraffin and the above procedure repeated. However, abnormal fluctuations remained evident, making the technique non-applicable.

Rather than remove the root system from the plant, a closed unit was devised in which the root system was contained undamaged. The apparatus consisted of an Erlenmeyer flask filled with a sufficient amount of fluid to cover the root system. The top of the flask was sealed about the stem of the plant with clay in such a manner that the foliage remained exposed to air so that normal transpiration could take place. As was done previously, transpiration was determined as the weight loss per unit time interval. The abnormal fluctuations observed in the two previous methods were not observed in the submerged technique outlined above. In some instances, a slight decline or increase in rate was noted as the plant adjusted to the humidity of the atmosphere.

It was important that a measurement of stomatal aperture be made to confirm that the effect of a transpiration inhibitor was controlled by the stomates and not by some less easily observed organ of the plant. Unfortunately, the stomates of coniferous plants are sunken within the epidermal tissue rather than being exposed to ready observation. Further, the effect of a chemical upon the tissue must be observed immediately without altering the plant tissue in any manner, thus making tissue slides impossible.

Joan Tucker of Oxford University devised a positive impression technique (for the study of stomatal apertures) utilizing a rubber mold made of the plant tissue. An extremely fast hardening fluid rubber impression is made of the needle to be studied. The mold is filled with diluted nail polish, the nail polish removed upon hardening, and the nail polish positive observed under a microscope. The stomates are clearly visible in the hardened polish.

Numerous chemicals (especially Beta-naphthoxyacetic acid, 2, 4–dichlorophenoxyacetate, and the alpha-hydroxysulfonates) have been shown to bear an influence on stomatal condition. Recent work by Israel Zelitch has explored the role of 8-hydroxyquinoline sulfate as a regulator of the glycolic acid oxidase system partially responsible for the control of stomatal aperture in certain plants. We desired to test the ability of 8-hydroxyquinoline sulfate to decrease the transpiration rate of Douglas-fir if the chemical was imbibed into the plant through the root system.

Having a fairly reliable means of measuring transpiration rate, it was reasonably simple to contrast the transpiration rate of a treated plant to that of a control. Using the submerged technique, the roots of the seedlings to be studied were contained within a flask filled with either a 3000 ppm. solution of 8-hydroxyquinoline sulfate or water and the rate of transpiration determined. A statistical analysis of the results showed a definite, although very slight, decrease in the transpiration rate of the treated seedlings. The mean rate of transpiration of the con-

(Cont. Page 67)

FORESTRY SCIENCES LABORATORY

by Wes Wong
Sr. F.M.

Throughout the United States, both government and private agencies are concerned with forestry research programs. Here in the Pacific Northwest, several of these laboratories are studying and developing new methods and specialized techniques to assist the field forester in his day to day problems. On Jefferson Way and adjacent to the future site of the new School of Forestry building, the Forestry Sciences Laboratory of the Pacific Northwest Forest and Range Experiment Station under the United States Forest Service is located. With its on-campus location, this laboratory is closely associated with the Oregon State University.

In this organization, research in the divisions of forest insect and disease control, forest management, watershed management, and economics are carefully planned and executed by highly trained and competent specialists in each project.

The insect research division at this laboratory is primarily concerned with biological control of forest pests with emphasis on insect disease and insect physiology. In conjunction with these objectives studies are also made in assisting chemical control measures. Native and foreign insect parasites and predators are being studied for its potential in keeping endemic populations of forest pests in check. Possible development in new methods of insect control such as by sterilization, growth regulation by hormones and attractants are being intensively performed.

Forest disease research is principally aimed at determining control methods for root diseases of western forests. This work is one of the more difficult problem areas since orthodox methods for control of root diseases is hardly practical in terms of forestry costs. Fundamental studies in the physiology, ecology, dissemination processes, and genetic relationship are undertaken at the present. The matter of adverse effects of soil microorganisms to produce antigonistic tendencies with other organisms are being carefully tested to help bring about natural control measures.

In forest management, research emphasis is placed on silvicultural practices, physiological studies, and tree improvement. In the coastal forests of this region, silvicultural improvement studies in harvest cutting, commercial thinning, and natural regeneration are being successfully carried out. In the high mountain forest types (true firs, mountain hemlock, Engelman spruce, and western white pine),

Forestry Sciences Laboratory

seed production, regeneration release, and species-site relations are the primary areas of study. The objective here is to sharpen silvicultural practices to produce merchantable forest crops along with other land uses in these areas.

Seedling physiology studies are designed to provide the basic information as part of a research project in seedling, planting, and nursery practices. These studies explore seedling characteristics, growth processes, and responses to varying environmental conditions.

Research in tree improvement is designed to gain the knowledge of inheritance of traits, existing genetic variations, methods for improving tree breeding, and seed orchard practices. The tree species primarily concerned with in this study are Douglas-fir, ponderosa pine, western hemlock and true firs. Hereditary studies with Douglas-fir and ponderosa pine began in 1921, and 1926, respectively. In the last decade, emphasis has been placed on seed orchard developments.

Watershed management includes all the relationships of the total ecosystem of the forest community. Research in this phase of land management is aimed at determining the characteristics and inter-relationships of soil, vegetation, and water as affected by logging methods, road construction, and silvicultural practices. Studies are concentrated on the means to reduce erosion and sedimentation and prevent stream channel impairment. Also the quantity, quality and period of runoff from our conifer forests of Western Oregon and Washington are scientifically considered.

Forest economics research at Corvallis is mainly concerned with the feasibility and application of skyline logging systems for harvesting timber in rugged topography where unstable soil conditions and excessive road construction cost would surmount cost of our present operations. The Skagit Sky-Car and the Wyssen Skyline-Crane are tested in field operation for costs, yarding distances, log size, slope and other factors.

Although the research in this Forestry Sciences Laboratory is primarily basic in nature, it solves and presents answers to many of the present problems confronting the forest manager involving improvement of forest trees, deployment of silvicultural practices, protection against forest insects and diseases, and watershed management.

A LOGGING ENGINEER'S EXPERIENCE IN THINNING

by Marvin Rowley
Graduate of 1950

I have had the privilege of working in the field of stand improvement called thinning for the past ten years. Much has been written on this subject and most foresters who have worked in this area of management have their pet ideas. Many of these ideas conflict, but among those men who are actively participating in thinning there is much general agreement. I will endeavor to give a few brief impressions of the thinning techniques from the logger's standpoint.

It has been our experience that a commercial thinning in Douglas-fir is feasible at about 30 years of age on medium sites and with good topography and road access or when the average log size is 40 bfm or more. We have found that the major cost controlling factor is the average log size. The volume per acre cut has little influence on the logging cost.

The direct drive chain saw is best for the small and medium size trees we log in thinning. They are light, fast cutting and easily maintained. The one disadvantage is the need for accurate filing. The correct tooth shape must be maintained to get the full use out of the chain and give a longer bar life. The falling technique is considered to be perfected when all the trees end up on the ground. In thick young stands this can be a major problem. We have learned to get most of the trees on the ground and leave the hangups for the yarding crew to pull down and buck with the landing saw.

Speaking of crews; we have used various size crews. Most thinning operators use a three to five man crew with cutters helping set chokers and tractor operators sometimes helping cut. We have found this type of crew organization wasteful. We have a cutting crew, a yarding crew and a loading crew. We have found that we produce more bfm per man hour by each man working at his own speciality.

One main point to be remembered is the stump height. They should be as low to the ground as possible and never over 12" high. Besides increasing utilization this allows tractors to move through the stand more freely.

The best tractors for small logs is in the 30 to 70 hp. class. The smaller tractors are best for thick stands and small logs but our experience has shown that we can do the job with the medium sized tractor as well and with fewer breakdowns. It is important not to be under-powered. Not enough power results in excessive damage to the residual stand. Wheel tractors such as the Garret Tree Farmer and similar tractors will do a good job but are limited by topography. We have successfully thinned on slopes up to 80% with tractors without causing excessive damage. In the older stands there is more freedom of movement for equipment and less need for small equipment. As log sizes get larger it is important to limit the number of logs per turn. Most of the stand damage is done with wide turns. They are harder to guide and have a tendency to spread against trees adjacent to the skid roads. Skid roads should be located to lead straight into the landing with gradual curves and located to minimize damage to trees and reduce soil errosion.

In our thinning we have kept the landings small and close together. We have found that the longer we load on a landing the more damage occurs to the trees surrounding it. This procedure of moving landings makes it necessary to use a mobile loader. We try to locate roads and landings to serve future thinning and harvesting needs. We do not bring the roads up to a first class standard for an initial thinning but leave some of the development for the next time through to spread the road costs over several thinnings.

There are many methods of loading thinning logs. One which is used in the East and is gaining in popularity here is the self loader. This type of loader lends itself to scattered and small logs. Another method is the front end loader mounted on tractor. It is a good loader for a small operation because it can be used to skid logs, build roads, and load. The one machine can be used for the whole thinning job. Crane or shovel type loaders can be used where there is a high volume of production. This type loader requires a little larger landing and advanced decking of logs in some cases.

For hauling logs we are using a short logger, a single axle truck and trailer, and a tandem truck and trailer. Each has an advantage depending on length of haul, size of log and type of loader. The short logger is uneconomical when hauling over 20 miles.

In the years we have been thinning, our equipment has changed and our methods of operating has changed. In fact, if there is one constant in thinning it is change. As new equipment is developed for thinning it will help make thinning more profitable for the land owner and logger alike. We look forward to seeing many of you enter this phase of forestry.

ELECTRONIC DATA PROCESSING AIDS PHOTOGRAMMETRIC-MENSURATIONAL RESEARCH

by David P. Paine
Assistant Professor — F. M.

Although a significant number of aerial-photo volume tables has been prepared within the past ten to fifteen years, the majority has either been developed graphically or statistically with the aid of desk calculators. Even with fully automatic desk calculators, the number and combination of variables which can be analyzed is greatly limited because of the magnitude of the calculations involved.

With the aid of an IBM 1620 located on the OSU campus, a set of aerial-photo volume tables has recently been completed for ponderosa pine. A total of twenty-nine photo-measurable variables or combinations of variables were analyzed as to their significance in the prediction of D.B.H., board foot, and cubic foot volumes. The basic predicting variables were total height (T.H.), visible crown diameter (V.C.D.), several measures of density (%D) and in some cases, sight index (S.I.). Many interaction terms, such as [(T.H.) (V.C.D.)] and [(V.C.D.)^2 (%D)] were analyzed. The one best predicting variable (highest correlation) was [(T.H.)^2 (V.C.D.)] which explained about 95 percent of the variation in either cubic or board-foot volume. The final equation settled upon for the prediction of cubic volume* was: CU. FT. VOL. = $0.36 + 3.5367 \times 10^{-4}$ [(T.H.)^2 (V.C.D.)] + 1.2265×10^{-9} [(T.H.)^2 (V.C.D.)]^2 - 1.88×10^{-15}[(T.H.)^2 (V.C.D.)]^3. This may seem like a rather complicated way to get volume, but a series of curves or a photo-volume table can be made and the photo-interpreter can then forget about the equation and concentrate on

* Includes stump, bole, and top. Developed from 510 ponderosa pine trees from sites II, III, and IV by multiple regression techniques.

making photo measurements. Actually the I.B.M. machine constructed the required volume tables for two-foot V.C.D. and six-foot T.H. intervals based on the appropriate equations.

When predicting D.B.H., a slightly different predicting variable proved to be best [(T.H.) (V.-C.D.)]. Altogether six equations and six photo-volume tables were developed, predicting cubic feet, board feet and D.B.H. for both even-aged and all-aged stands of ponderosa pine.

A graduate student, under the direction of the author, is presently working on a similar set of volume tables for sites V and VI using data from the ponderosa pine forests of Utah. The author using 1:5,000 scale photos made a 100 percent aerial-photo cruise of a three acre tract of ponderosa pine on the Pringle Falls Experimental Forest and found that his results were 4 percent low when compared with a 100 percent ground check. One graduate student's photo-cruise of the same area was 10 percent low using 1:3,000 scale photographs. Both estimates can be greatly improved by what is called double-regression sampling, which is a statistical method for adjusting accumulated errors of photo measurements, trees hidden from aerial view and slight inaccuracies in the photo-volume table used. Regression sampling requires that a sub-sample be taken on the ground which will also yield information on such characteristics which cannot be measured on photographs such as log quality and percent cull.

Another aspect of aerial-photo cruising is presently being considered; which is the application of Bitterlich's theory to photo-cruises. Measuring each tree in a given plot is time consuming and tedious, even on photographs. A circular clear piece of plastic with an appropriate angle etched on it with the vertex at the center was developed. A very slender pin was then pushed through the plastic templet at the vertex of the angle and then through the photo at randomly selected sampling points. The plastic disk was then rotated about the pin and all trees with crowns large enough to interesct the angle were photogrammetrically measured for volume. Stand and stock tables were then constructed in a similar manner as is done in conventional ground prism cruising.

It was found that a "Crown Area Factor" (corresponding to "Basal Area Factor") of about 3000 was satisfactory. Using this angle, which is 30° 26' gave an average count of about six trees per point. One preliminary cruise using this method had an error of less than two trees per acre as far as tree count was concerned, but the volume estimate was ten percent high. However, since then, new photo-volume tables have been constructed which give small volumes for the larger trees and the majority of trees selected for measurement by this method are larger than the average sized tree.

This new method of angle-gage photo-cruising needs much more study to determine the optimum angle and photo scale to be used. The method will undoubtedly have to be limited to large scale photographs and relatively open-grown stands such as ponderosa pine.

The study also revealed that it may be possible

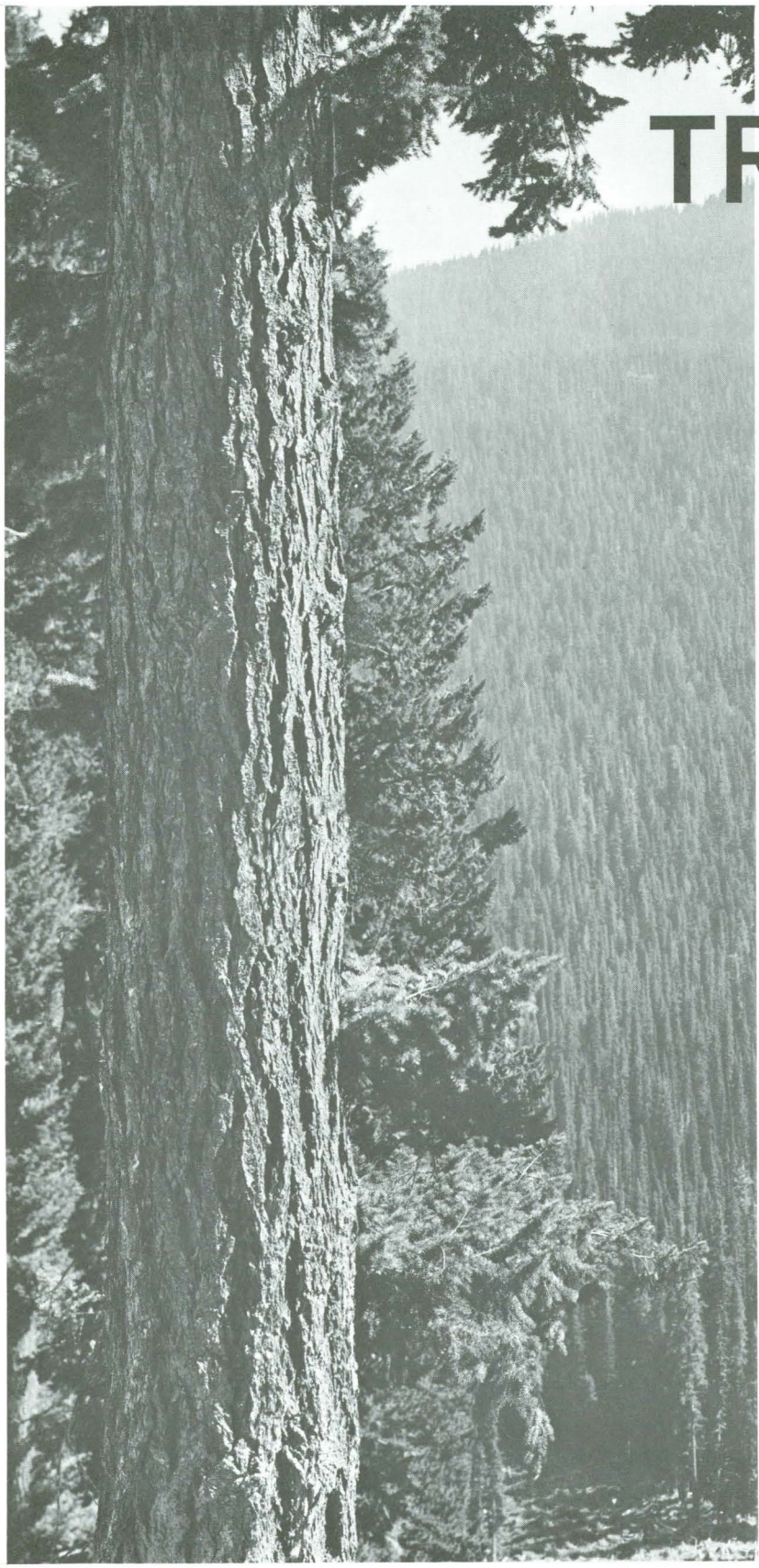
to predict site index for even-aged stands of ponderosa pine from aerial photographs. Based on a limited amount of data, the following equation will predict average stand height at age 100 within plus or minus 8.2 feet, two times out of three: $S.I.=76.25 +0.91412 (T.H./V.C.D.)^2 - 0.60305 (\%C)$.

The theory is that the ratio of (T.H./V.C.D.) increases as site index increases. In other words, trees grow faster in height in relation to their crown spread on good sites than on poor sites. The (squared) term in the equation indicates that this is a curvalinear rather than a straight line relationship.

The (%C) variable is necessary since stand density or percent crown cover has an influence on crown diameter and thus alters the (T.H./V.C.D.) relationship within the same site class.

This equation needs further testing with additional data over a greater range of site indexes. The above equation is based on data representing site indexes from 60 to 110. For the statistically minded, the correlation coefficient is 0.886 which explains over seventy-eight percent of the variation in site index.

Even with these encouraging results of site index and volume prediction from aerial photographs, the author does not recommend photo-cruises without ground checks. He recommends a statistically calculated optimum combination of photo and field plots. This type of sampling should yield the greatest precision for a given cost or the least cost for the given degree of precision and save much time and money in the long run.



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SMALL FOREST OWNERS (Cont. from Page 52)

All these observed relationships between personal and tract characteristics and forest management are subject to considerable variation. Not every good forest manager ranks high in all the personal and tract characteristics; and not every forest owner who seems to have a good forest-management potential (based on his personal and tract characteristics) is a good timber manager. There are many special circumstances and situations which keep the correlations down to a far-from-perfect status.

Certain individual characteristics are, nevertheless, very good "predictors". Statistical analysis showed that owners' *interest* in forestry could by itself explain 62 per cent of the observed level of forest management. *Interest* and *condition* of the forest, together explain 78 per cent of the variation. By adding *stocking* and *progressiveness* as co-predictors with *interest* and *condition*, 80 per cent of the variation in level of forest management can be explained.

The quality and type of forest management is as much influenced by personal and psychological factors as by strictly economic factors.

If constructive forest management is to be practiced, the following requisites must be met: There must be some *incentive* for doing so. This incentive can be supplied by economic considerations or by the owner's interests, likes and dislikes, background, aptitudes, ineptitudes, abilities, and disabilities. The constructive management must fit in with the owner's *objectives* and his personal values. There must be some *opportunity* for the practice of forestry, although with sufficient interest or sufficient financial means, opportunities can be created. There must be some *means* of working toward the objectives of constructive forestry. Such means may be financial if sufficient investment capital is available. If there is insufficient capital, there can be a substitution of the owner's time and energy.

An owner with incentive to practice forestry and some means of doing so – sufficient money or time and energy – may still face other *obstacles*. These obstacles may be health, physical disability, or age; or they may be other demands on the owner's time or other high-priority uses for land, labor, or capital. It is remarkable how many owners with major health problems or over 65 years of age (even over 80) are good forest managers. The chief competing land use is the grazing of domestic livestock. This livestock enterprise often makes heavy demands on the owner's time or money as well. In some cases, the owner raises livestock as a hobby and actually loses money on it. Many forest owners consider their timber as a savings account which they draw on whenever money is needed for a family emergency, to send a daughter to college, or to finance some purchase of farm machinery or livestock.

Actually, lack of interest is one of the major obstacles to the practice of forestry. To some extent, an interest in forestry can perhaps be cultivated; but other dominant, conflicting interests sometimes preclude an interest in forestry. A good manager must be alert to opportunities for profitable investment or improvement in timber management. An outsider can point out opportunities, alternatives, and probable consequences; but only the owner can act on them. It is how things look to the *owner* that counts.

An individual usually has little difficulty in deciding which of two alternatives will give him the greater satisfaction. He weighs intuitively the satisfaction he receives from recreation, leisure, or aesthetic enjoyment against the satisfaction he would receive from some economic activity. Such economic activity might result in a direct or consumer satisfaction or in an indirect or producer satisfaction. One 69-year-old sawmill worker who, according to his neighbors is so ornery that his wife and four children couldn't stand living with him and left him, one by one, obtained much of his relaxation and satisfaction in the following way: After supper he would pick up his axe, and followed by his dog, set off for an hour or two of pruning or thinning his Douglas-fir trees. Although he was fully aware that this work increased the value of his stand, he did it mainly because he enjoyed it, liked the appearance of the improved stand, and "thought it was the right thing to do."

A person tends to budget his time and energy intuitively in such a way that the last unit of time or energy applied to each alternative activity tends to yield him the same amount of satisfaction. He sometimes weighs the satisfactions or benefits he would receive from an additional hour's or half-day's work against what he would receive from an equal time devoted to rest or leisure. In the same way, a forest owner does this subconscious or conscious weighing of satisfactions in connection with forest management and land-use decisions. His interests, preferences, and outlook are weighed in with or against better forest management.

Economic motives become dominant over personal interests only insofar as the benefits expected from an increased income outweigh those that would be obtained from pursuing one's interests, hobbies aesthetic satisfactions, or natural bents. An owner who acts largely on the basis of economic motives in a given situation will tend to act substantially as the "economic man" should. But if other factors enter in, such personal preference for one land use over another, or pride in achievement or accomplishment, then the choice may depart from a strictly economic basis. Best economic use of whatever resources an owner considers most scarce or inflexible, – time, energy, money, land – will not necessarily favor timber use over alternative uses. This may be especially true when the individual owner's time-preference rate or planning horizon is considered. The time over which owners consider the balancing of their satisfaction varies considerably among individuals, depending on their general outlook and on their concepts of uncertainty and present alternative opportunities or present need. Some individuals consider only short-sun satisfactions; others give weight to long-run satisfactions or benefits. An owner whose present income is less than his present living expenses is not a good prospect for adoption of a plan for deferred harvest of merchantable timber.

For reasons increasingly clear, foresters have not had great success in "selling" forestry programs proposed by public agencies to the small-forest owners. The futility of trying to change convictions by sheer logic is pointed out by Lewin and Grabbe (2):

> "Arguments proceeding logically from one point to another may drive the individual into a corner. But as a rule he will find some way – if necessary a very illogical way – to retain his beliefs."

Dr. John D. Black of Harvard, although an agricultural economist, not a forester, was well versed in forestry problems. Barraclough and Gould (1) relate the following:

> After a long discussion of various forest management programs that could be used in the Northeast, a forester asked Dr. Black, "Which would you advise an owner to use?" The answer was, "I never tell an owner what he should do; I like to help an owner lay out his alternatives and evaluate them, and then let him decide what he wants to do."

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Literature Cited:

(1) Barraclough, Solon L. and Ernest M. Gould, Jr. 1955. *Economic Analysis of Farm Forest Operating Units*. Harvard Forest Bulletin No. 26. Petersham, Massachusetts. 145 pp.

(2) Lewin, Kurt and Paul Grabbe. 1945. Conduct, Knowledge, and Acceptance of New Values. *Journal of Social Issues* 1:3:53-64.

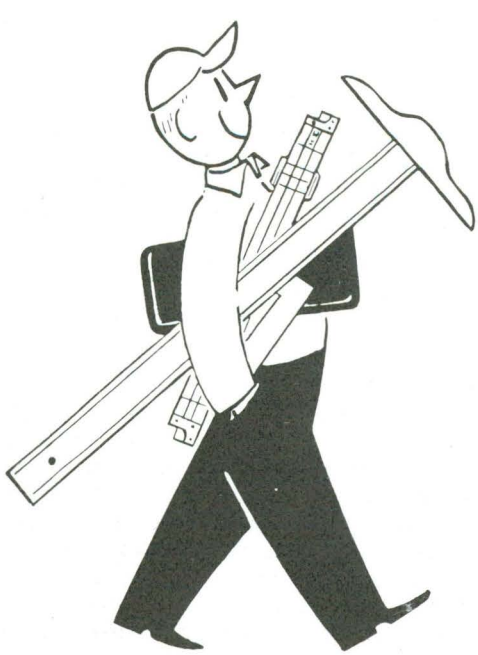
(3) Stoddard, Charles H., Jr. 1950. Needed: A research Program in Forest Owner Education. *Journal of Forestry 48:339-341*

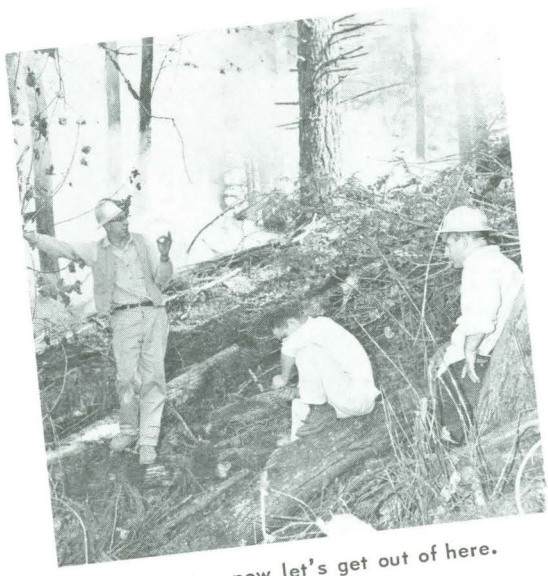
NSF PROGRAM (Cont. from Page 56)

trol was 1.21 grams of transpired weight loss per 100 grams of fresh needles per hour. This contrasted to the experiment, which transpired at the rate of .98 grams per hour.

Stomatal apertures were similarly contrasted between an experimental and a control seedling using the Tucker method mentioned previously. For the purposes of standardization, needles were immersed in either 8-hydroxyquinoline sulfate or water and exposed to high intensity light for a period of one-half hour. Molds were then made of the needles and the impressions studied under a microscope. Direct measurement of stomatal apertures showed the diameters of treated stomates to average 2.07 microns. This is contrasted to the apertures of the untreated needles which were found to average 4.39 microns in diameter. The range of aperture diameters in the control was from 3.09 to 7.18 microns. The aperture diameters of the experiment ranged from 1.64 to 2.50 microns.

In the above experiments, it was shown that transpiration rate may react catastrophically with damage to the plant root systems. In the case of 8-hydroxyquinoline sulfate, transpiration rate is a direct response to the degree of stomatal aperture. Although there was a decrease in the transpiration rate, it was exceedingly small and scarcely noticeable except under the most exacting methods. Any practical value that 8-hydroxyquinoline sulfate might have in the pronounced decrease of transpiration is apparently negligible.



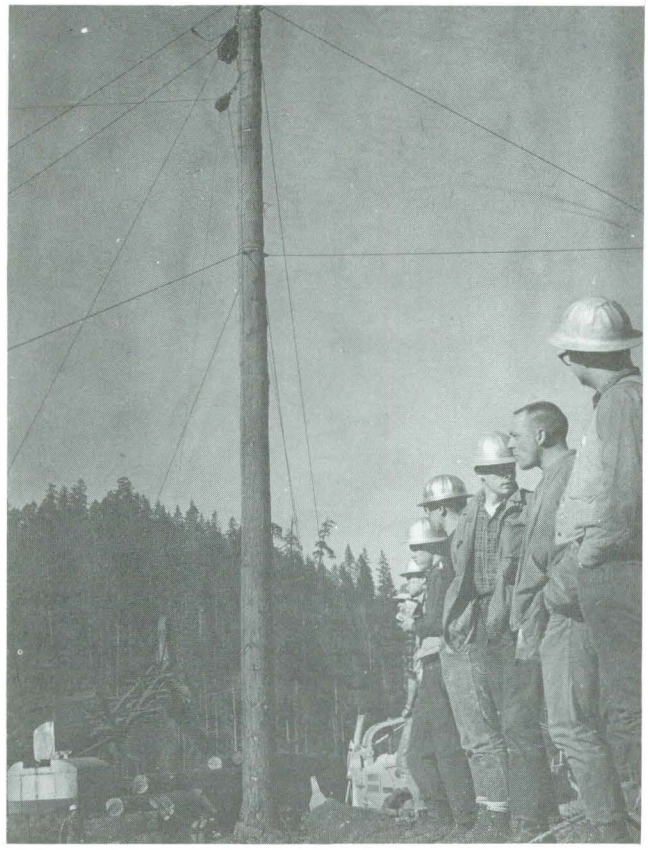


Perfect – now let's get out of here.

Put the match there.

Did you see where that scaler went?

Here he is Bell!



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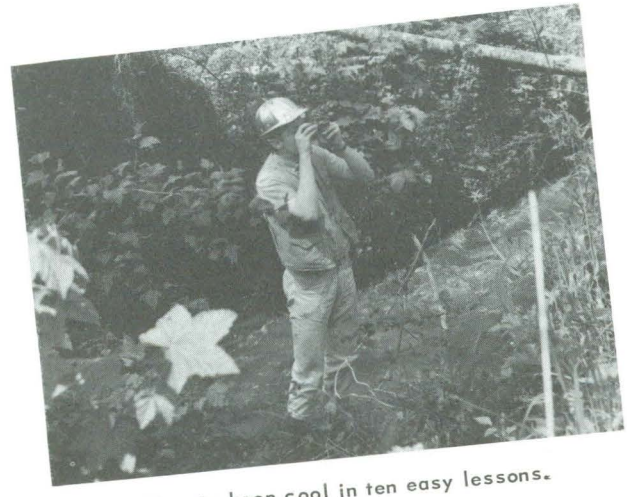

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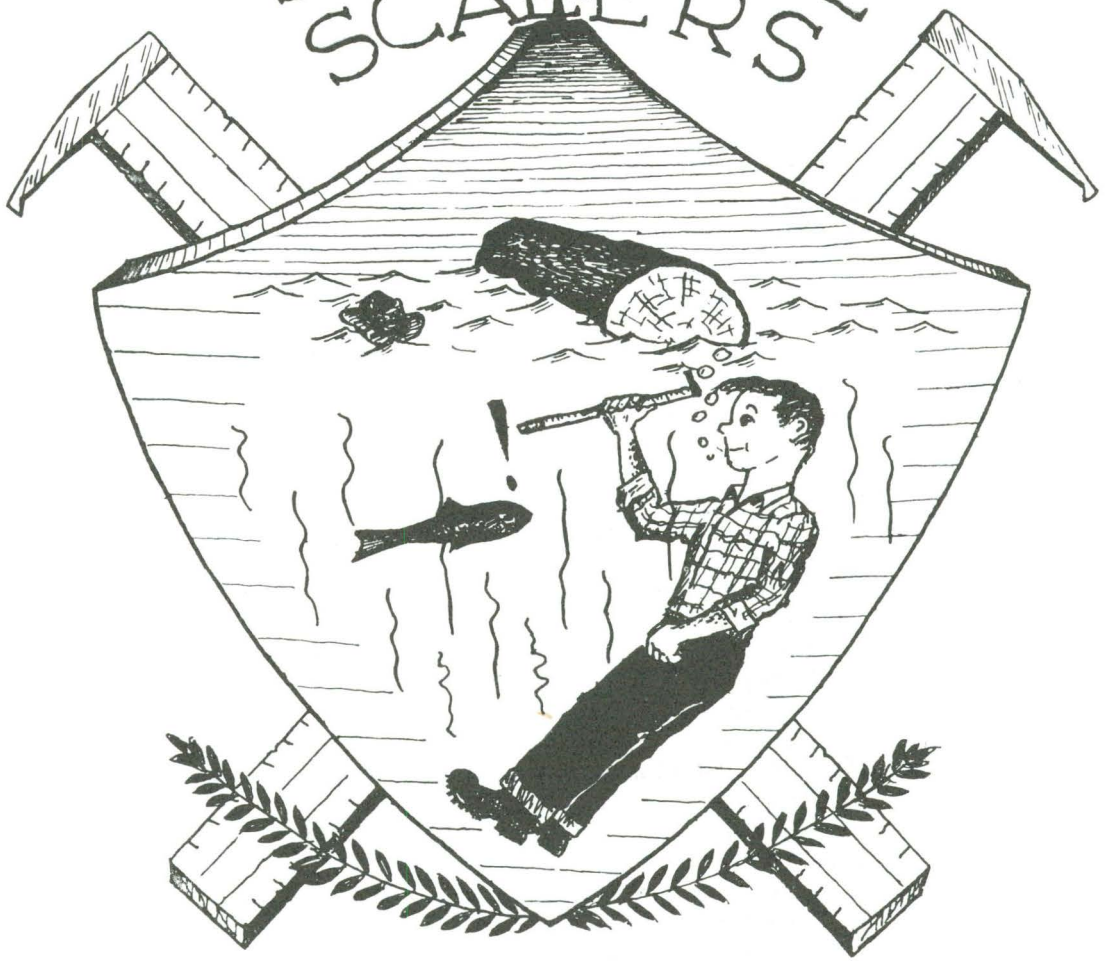

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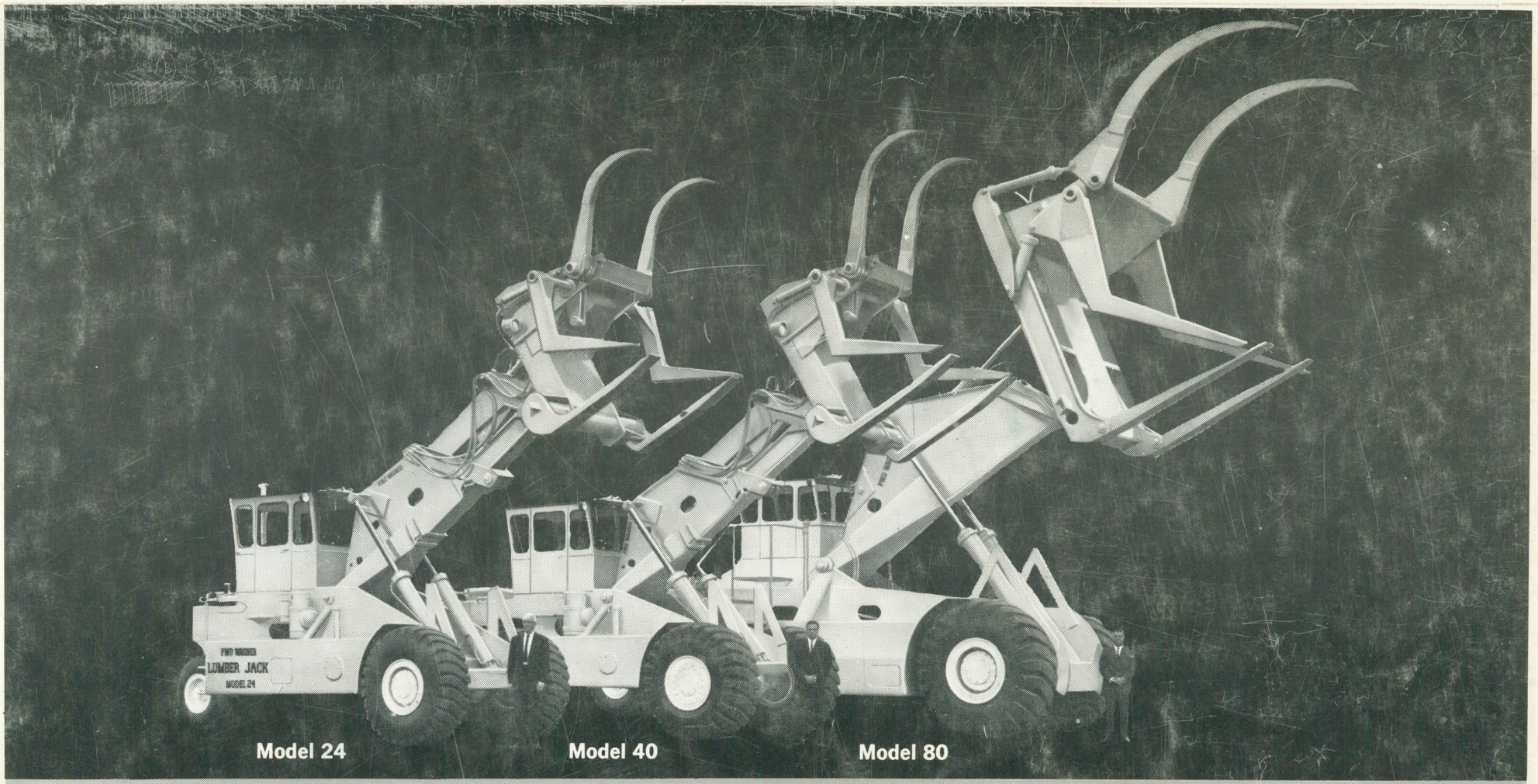

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