LIFE AT TECH ...
FOREWORD

Another year has gone by and with its passing many exciting moments go also. To those that want to remember and to those that want to learn, the 1975 Forester is presented to you. The staff worked long and hard throughout the year selling advertising and meeting deadlines and for this I would like to thank them.

I would also like to extend my appreciation to E. J. Young from the Division of Fire Management of the United States Forest Service for providing much of the resource information and all of the forest fire photographs used throughout the book. Without the cooperation of the Forest Service we would not have produced as fine a book as this edition is.

The last words of thanks should go to you, our readers, for without your continued support we could do little. Please let us know how you liked your edition of the Forester and any suggestions you may have for next year's book. Thanks everyone, for making my job an enjoyable one this past year.

Catherine Anne Riley, Editor
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SMOKEY SALUTES

DR. ROSWELL K. MILLER

Forester Salute

The *Forester* tips its Smokey Bear hat this year to Dr. Roswell K. Miller, connoisseur of forest fire behavior and management, double-entendre levity, and arresting artistry of projected images. Ros, as he is best known to students and faculty, is author of the feature article on forest fire in this issue of the *Forester*.

Possessing an extensive store of knowledge, experience and esoteric color slides, a keen wit and sense of humor, and an engaging personality, Ros has carved a broad niche for himself in his sphere of interests and activities. In addition to teaching such subjects as forest management, surveying and forest fire behavior and management, Dr. Miller serves as faculty advisor to the Forestry Club. He also holds a position of senator-at-large as a member of the Michigan Tech Senate, and as a regular bowler provides weighty support for the departmental faculty bowling team, the Woodchoppers.

Dr. Miller's broad background contributes heavily to the instructional program of the Forestry Department. A native of New York State, he was born at Roslyn Heights and graduated from high school in that city. During his early years, he gained much interest in fire fighting through the influence of his father and other relatives who served as members of the local volunteer fire department.

Following his high school graduation, Ros completed a one-year program at the New York State Ranger School at Wanakena, N.Y. Then, after a period of employment with a landscaping firm, he responded to Uncle Sam's call and served for two years in the Army. During this time he was stationed in Germany, and rose to the position of Regimental Gardner.

Upon his release from the Army, Ros entered the New York State College of Forestry at Syracuse University, and received his B.S. Degree in 1958. He continued in graduate study at Syracuse and obtained a Master of Forestry Degree the following year. He then headed west, and secured employment as a forester with the U. S. Forest Service at Bend, Oregon. Eight months later he accepted a job with the Crown Zellerbach Company and moved to Tillamook, Oregon. During his four years with C-Z Ros was engaged in forest engineering and timber sale work.

In 1964, he moved to New Mexico where he was employed as a forester and logging engineer for Navaho Forest Products, and the following year he became chief of a surveying party for the New Mexico Highway Department.

Later in 1965, Ros left the Southwest and traveled to Houghton, where he accepted an appointment as assistant professor at Michigan Tech. During his first two-year period of teaching, Ros found this an appealing occupation and decided to further his qualifications through doctoral studies. Consequently, in 1967 he enrolled at the University of Michigan at Ann Arbor for two years of study. He returned to Michigan Tech in 1969, and received the Ph.D. Degree from U-M in 1972. Soon thereafter he was pro-
moted to his present rank of associate professor.

Dr. Miller married Ruth Stockinger at Roslyn Heights, N. Y., in 1955. The couple have three sons, David, 16, Wayne, 15, and Ricky, 13. Mrs. Miller also holds a faculty position as Acting Head of the Department of Nursing at Michigan Tech. All members of the Miller family are active in many school and community affairs.

Hockey has become one of Ros's chief extra-curricular interests. Active for several years in local junior hockey, he has served for three seasons as a coach and engages in public relations and scheduling assignments for the hockey program. He also is an avid fan of Michigan Tech's varsity hockey Huskies.

Among his many community interests, Dr. Miller is active in the Houghton Methodist Church, where he is a member of the church choir and participates in the lay leadership of the church.

Always striving to improve the education of Tech foresters in theory and practice, Dr. Miller spends many of his working hours counseling with the students, and providing guidance in the activities of the Forestry Club. He is deeply involved in the development of a new option in surveying which is being initiated in the Department of Forestry.

We salute Dr. Miller for his enthusiastic and dedicated work in behalf of the students, as well as for the wit, candor and generous store of good humor which he dispenses broadly to those about him.
Among the students in Forestry who held scholarships this year are, left to right, front row, Phyllis Dorman, Higher Education Assistance Authority Scholarship; David Kohtala, M.H.E.A.A. Scholarship; and Jeff Jandron, M.H.E.A.A. and Athletic Scholarships; back row, Charles Ludwick, M.H.E.A.A. and Law Enforcement Education Program Scholarships; Don Mankee, M.H.E.A.A. and Basic Education Opportunity Grant; Gary Saunders, University Student Award, and Daniel DiPietro, A. Andrew Scholarship and M.T.U. Student Award. Not pictured, Catherine Riley, George M. Pulman Scholarship and United States Scholarship.

Some of the Forestry students who held scholarships this year are, left to right, Jack Brunell, Wisconsin-Michigan Timber Producers Scholarship; Pete Slowik, U.S.A. Scholarship; John Helge, Army ROTC and Athletic Scholarships; Tom Phillips, Board of Control Scholarship; David Shaner, Michigan Competitive Scholarship, and Jerry Densmore, Michigan Competitive Scholarship.
REPORT FROM THE DEAN

It is almost routine now to report to you that enrollment in Forestry has again increased substantially. Six-hundred and fifty-nine young people were on hand last fall—a 22% increase over the 1973—and prospects for next year indicate further increase. Almost 15% of the freshman class were young women, which continues another trend. Faculty growth has not been as rapid as hoped for. Nevertheless, the teaching faculty will number 20 when all authorized positions are filled.

Students already are enrolling in the new Pulp and Paper Science Program although officially it will not begin until next fall. Dr. Yuan-Zong Lai has been engaged to work with Dr. Bernard Sun as instructors in the program. A pulping lab is being set up, but chemistry department facilities will be used for much of the lab work.

Very preliminary planning has begun for expansion of Forestry Department facilities, since current and projected student loads can hardly be handled in facilities built to house half as many students. One minor addition will be a greenhouse for teaching plant propagation techniques.

At the Ford Forestry Center a very successful October gathering celebrated 20 years of operation. More than 200 people were addressed by Dr. W. Dale Compton, Vice President of Scientific Research of the Ford Motor Company, and Mr. Ray Kooi, Administrator of the Ford Motor Company Fund. An Upper Peninsula pasty luncheon was served and bus tours of the research forest and a tour of Alberta were taken.

Last summer the Center hosted one segment of the Michigan Department of Natural Resources' Youth Conservation Corps activities. Twenty-four young men and women, and their supervisors, lived at the Center, and one crew worked on Center projects. A group will be at the Center again this year.

The Center also was the locale for the Forestry, Mountaineering, and Small Engine Repair instruction in the University's Summer Youth Program. Over 100 youths spent one or two weeks at Alberta.

A major effort at the Center concerns fuller utilization of the forest, especially of that portion which is popularly called "waste". A major contribution to that end was the donation by Morbark, Inc., of Winn, Michigan, of a $110,000 full-sized Metro Chiparvester. The machine also will be used for research on wood waste for energy.

The Institute of Wood Research has also had a successful year. It successfully developed and demonstrated the feasibility of its continuous particle board press system. This work was sponsored by the Upper Great Lakes Regional Commission. It also advanced work on its flakeboard pallets to the point where its single-face disposable pallets and its double-face rackable pallets are currently being market tested. This work was sponsored by outside funding. Work currently is proceeding on a single-face, rackable, nestable pallet.

A spur to this work was the engagement of Dr. Anders Lund as Director of the Institute. Dr. Lund, who was born in Minnesota, came to us via Texas A & M. Work at the Institute involves developing the peripheral systems both for its pallet work and its continuous press work. In the future, testing materials will assume greater importance at I.W.R. A new testing room, which includes a novel wall-mounted testing frame, is nearing completion.

Space does not permit covering all activities of the School of Forestry and Wood Products, but some others of them will be mentioned in other articles. In any event, what little could be said indicates the scope of activity in the School.

—Eric Bourdo
GENE'S

"TOP LOG IN THE DECK"

The more modern and scientific our world becomes, the more the need to educate our people. There is critical need for people to expand and develop the full array of technical and professional fact to the fullest and most complete extent. But in our world there is even more critical need to keep open our lines of communication to all our forestry students. This need is intensified as our undergraduate numbers increase annually.

Enrollment in fall, 1974, tallied 650 foresters. We now have a more cosmopolitan group—12% of our forestry students are women. There are four Vietnamese, one student from Ghana, and foresters have come to Tech from all regions of the country and Canada. As our foresters commence the process of taking full responsibility for their lives, there is need to confer with them in a warm and friendly manner. Not all talk needs to be lectures on technical jargon. This is one of the teacher’s freedoms, and more and more today, one of the responsibilities we must share. There is need to encourage development of each person’s abilities and skills, not only as students but as human beings.

During the past 12 years we have continued to personalize and humanize the forestry department learning experience for all our students. This becomes more difficult a task as enrollment increases. Certainly this is so when our enrollment has reached the 650 mark. But each of the faculty of forestry must favor that spirit which a person creates for himself through constant study and contact with eager and inquisitive minds.

Our call is to develop forestry education at Michigan Tech as an all-encompassing experience. We want each student—male and female alike—to experience orderly growth and development of their mind, social life, and civic responsibility. In this manner, we will truly educate young people for a professional life in our modern society.

It is the foresters growth in civic and social leadership that we need most to cultivate. Leadership—that is a vitally important ingredient of today’s forester. It will be even more significant for the forester of the future and daily we strive to cause our educational environment to take direction and awareness of this call. It is the people who do something who really make a difference—in our lives, in the lives of others, and in their communities.

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DENNIS A. BARIL,
Forestry Aide

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ALBERTA — FORD FORESTRY CENTER

JAMES DOUGAVITO, RALPH DUFFEK

JAMES JOHNSON

IRV ZEIMER, TOM KELLEY, BERNIE CARR

EVA MIRON, HELEN MAKI, ROBERT D. TEMBREULL, Office Services Administrator, ROGER L. ROGGE, Instructor, Manager of Operations, B.S. Michigan Tech University
SUSIE CRAWFORD  
Secretary for Dean Bourdo

LUANA C. KANGAS  
Secretary for Forestry Dept.

JOAN SHIPPELL

CAROL ISOLA

DON ANDERSON  
Custodian

RAY TUOMI  
Custodian
NEWS OF THE DEPARTMENT OF FORESTRY

Student enrollment and forestry faculty numbers reached new highs as the 1974-75 school year began, when 650 forestry students registered and two additional faculty members joined the Department.

The two new members of the faculty are Dr. Leon Buist and Mr. Kim Iles. Dr. Buist received his Ph.D. degree from the University of Washington, and has several years' experience with the Michigan Department of Natural Resources. His specialization is in forest recreation. Mr. Iles holds the M.S. degree in Forestry, from Oregon State University, and came to Michigan Tech on a two-year teaching appointment. His field of specialization is computer science and biometrics.

Dr. Buist terminated his appointment at Michigan Tech at the close of the 1974-75 school year, in order to take a position at the Sacramento campus of the University of California. It is hoped that his position will be filled with a new appointment in the near future. These appointments bring to 18 the number of faculty positions in the Department.

The appointment of Dr. Yuan-Zong Lai to the Forestry Department faculty, to provide instruction in the newly initiated wood and fiber utilization major, took effect at the beginning of the 1975-76 school year. He joins Dr. Bernard Sun in the new instructional program. Dr. Lai holds a B.S. degree in Wood Products Technology from Taiwan University, and M.S. degrees in Forestry and Organic Chemistry, and the Ph.D. degree in Wood Chemistry from the University of Washington. Since receiving his doctorate in 1968, he has engaged in post-doctoral work at the University of Washington and was a senior research associate at the University of Montana since 1973.

A new Forestry option in land surveying was approved by Michigan Tech this year. This option will provide qualified graduates to meet forthcoming higher standards required for registered land surveyors in the State of Michigan.

"New Horizons in Forestry" is the title of a series of radio programs aired by Tech's radio station, WGGL-FM, featuring developments and activities in the Department. Dr. Douglas Frederick is coordinator of these programs.

This year the Department acquired a remote terminal for access to Tech's new Univac 1110 computer. It is being utilized by faculty and students in course work and research.

A new method of producing wood pulp, which may revolutionize a major part of the pulp and paper industry, is in process of testing and development at M.T.U. Dr. Bernard C. Sun of the Forestry Department, and Dr. Larry M. Julien of the Chemistry Department, are inventors of the process. Called the MICHTEC process, it promises to increase pulp yields up to 15 percent and substantially reduce energy requirements through reduced cooking time. The process also eliminates the use of sulfur which is a major cause of pollution problems faced by the pulp and paper industry. General acceptance of the method will depend on its adaptability to large-scale operations and its economic feasibility.

During the past year, two major donations by industry have augmented the equipment available for instruction and research in wood and fiber utilization. The Kimberly-Clark Corporation donated six pressure vessels, and Charmin Paper Products, Inc., of Cheboygan, Mich., donated a Hunter's colorimeter, paper micrometer and balance. Equipment now available for use in this program is valued at more than $70,000. In addition, the Midland Division, Dow Chemical Co. gave the Department $30,000 in scientific equipment for the soils science laboratory.

Dr. Norman Sloan authored two articles which were published recently. Both dealing with his white pelican research, they appeared in the Wilson Bulletin and the Inland Bird Banding News. Dr. Sloan began a new study this year, on the reintroduction of the peregrine falcon to Isle Royale, the Pictured Rocks and Huron Mountain Club areas.

Dr. Lawrence Rakestraw has been on sabbatical leave this year to write the history of the Apostle Islands and Pictured Rocks National Lakeshores. He received a supplemental grant from the National Park Service for this project.

Prof. H. M. Steinhibl is engaged in a cooperative study with the U. S. Forest Service, Forest Engineering Laboratory, Michigan Department of Natural Resources, and Ahonen Lumber Co. in the mechanized thinning of precommercial northern hardwood stands. Various thinning treatments, costs, and long-term effects are being studied.

Dr. Douglas Frederick initiated a study of Dutch elm disease control in cooperation with the University of Wisconsin. He participated in a Society of American Foresters conference on management of hardwood forests in the Allegheny Plateau, at Syracuse, N. Y.

Dr. Michael Coffman spent the summer of 1974 as a consultant to the U. S. Forest Service in New Mexico. He investigated the regeneration of old burned areas on the Lincoln National Forest and recommended means by which these areas may be reforested. During the past year he continued the development of a habitat classification system for sugar maple in the Upper Peninsula.

Dr. Martin Jurgensen spent five weeks in the fall of 1974, and five weeks in the spring and early summer of 1975, engaged in studying the effects of logging residue removal in Douglas-fir and western hemlock forests of Montana.

Dr. Fred Stormer, in cooperation with other Tech faculty, conducted an ecological study for the Homestake Mining Co. near Calumet, Mich., to aid the firm in selection of sites for a tailings discharge basin in connection with its mining operations. He also presented a paper on white-tailed deer management at the 36th Fish and Wildlife Conference, at Indianapolis, Ind., and authored a
research bulletin on assessment of deer populations, published by Purdue University. Dr. Stormer and Dr. Rakestraw received a grant from M.T.U. to conduct a study of the historical ecology of Grand Island, near Munising.

Dr. C. R. Crowther served as a member of the planning committee, and as moderator of a session of the first Upper Peninsula Recreation Conference, held at Marquette in August, 1974. Dr. Gene Hesterberg also spoke at this conference.

Mr. Charles Hein was named to a committee of four faculty members responsible for recommending management policy for the Dow Wilderness Tract, located in Keweenaw County.

Dr. Gene Hesterbeg, Head of the Department of Forestry, was the recipient of the 1975 Clair M. Donovan Award for Outstanding Service, presented May 8, 1975, by the M.T.U. Chapter of Blue Key National Honor Society. Awarded to the person recognized for most outstanding service to the University in non-academic activities during the preceding year, the selection also is based on the individual's contributions to the public image of the University and his continuing interest in its development.

The citation noted Dr. Hesterbeg's development of the Forestry Department since becoming its head in 1962, his sincerity and genuine interest in students, and the high esprit de corps he has fostered in the students and staff of the Department.

Other contributions cited were his development of an orientation session for new students, acquainting them with the values and attractions of the Copper Country, his involvement in a week-long annual visit to meet prospective students and their parents, and his continuing contact with graduates of the Forestry curriculum.

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**FORESTRY GRADUATE PROGRAM**

**MARGARET HARRIS**

*Thesis:* Tree Root Mycorrhizae; Their Morphology and Occurrence in Mine Mill Tailings.

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**PROF. STEINHILB HONORED**

Prof. H. M. (Hammer) Steinhilb was awarded an honorary Ph.D. Degree at the spring initiation banquet of Xi Sigma Pi at Michigan Tech on May 15, 1975. The degree, signed by Dr. Eric A. Bourdo, Jr., Dean of Forestry and Wood Products, and Dr. Gene A. Hesterberg, Head of the Forestry Department, was presented by Dr. Michael Coffman, faculty advisor to the society. The certificate states:

"The School of Forestry, Houghton, Michigan, hereby grants the Degree of Doctor of Philosophy to Helmut M. Steinhilb for outstanding achievement in philosophical application to practical forestry."
WILLIAM AKKER
Norton Shores, Michigan

PAUL APPELT
River Forest, Illinois

DAVID ANDERSON
Caro, Michigan

RICHARD BARNES
Coldwater, Michigan

MARK AUERHAMER
Frankenmuth, Michigan

DAVID BAUKUS
West Allis, Wisconsin
DAVID BERGMAN
Cadillac, Michigan

MICHAEL BERGSTROM
Midland, Michigan

KEITH BREY
Stambaugh, Michigan

JACK BRUNELL
Kingsford, Michigan

DAVID BUCK
Farmingdale, New York

PAUL CALL
Hancock, Michigan

LINDA CHEEK
Saginaw, Michigan

DANIEL CONDON
Chassell, Michigan

DANIEL DI PIETRO
Worth, Illinois
MARK DRYER
Dearborn, Michigan

DOUGLAS EHMAN
Stevensville, Michigan

DAVID ENGLEMAN
St. Clair Shores, Michigan

JAY ERICKSON
Stambaugh, Michigan

DOUGLAS ERWIN
Canton, New York

TERRY FILIPPI
Keewatin, Minnesota
TIMOTHY FOSS
Highland, Indiana

SCOTT GLADSTONE
Downsville, New York

BRIAN GLAGOLA
Broadview Heights, Ohio

WILLIAM HENSEL
Dollar Bay, Michigan

CARL HOUGH
Ramsey, Michigan

CALVIN KANGAS
Ewen, Michigan
SUSAN KESTI  
Akron, Ohio

BEN KLEMKE  
Ionia, Michigan

KENNETH KLUMPP  
Pinconning, Michigan

DAVID LOMAS  
Livonia, Michigan

ROBERT LUNDBERG  
Trout Creek, Michigan

MARY MCKINNON  
Duluth, Minnesota

JAMES MEIERSONNE  
Rockford, Illinois
MICHAEL MESSNER
Bad Axe, Michigan

DANIEL MILLER
Plainwell, Michigan

DANIEL PERTTULA
Trout Creek, Michigan

GARY PISONI
Iron River, Michigan

ROBERT POTE
Pontiac, Michigan

KAREN POTTER
Hancock, Michigan
LESLIE QUICK
Detroit, Michigan

KEITH RICHMOND
Houghton, Michigan

LESLIE RUSSELL
Kalkaska, Michigan

GERALD RYSZKA
Roseville, Michigan

ANDREW SOLKA
Iron River, Michigan

JEFFERY SPRINGER
Rochester, Michigan
KENNETH STAUGE
Foxboro, Wisconsin

DAVID SUNDBLAD
Ishpeming, Michigan

JOHN VOLLMER
Lake Linden, Michigan

FREDERICK WARK
Livonia, Michigan

RICHARD WARNER
Detroit, Michigan

BRUCE WENTELA
Nisula, Michigan

SENIORS NOT PICTURED

LEONARD ALMQQUIST
JAMES AMMESON
ROBERT BELLINGER
JOHN BLATCHFORD
JACK BROWN, JR.
MICHAEL BURKET
JOHN CHILDS
THOMAS COLE
FREDRICK COOK
JAMES DEWEY
ROGER DOBBERSTEIN
JOSEPH DUDA
DAVID ERICKSON
DOUGLAS GORDON
BARRY FAY
WILLIAM GARDNER
NANCY HALL
LEIF JOHNSON

STEVEN KLINGAMAN
ANDREW KOVALCHIK
RICHARD MIDDLETON
EDWARD MORSE
GLENN MROZ
JAMES NASH
DAVID NEWMAN
JOSEPH NIEMI
NEIL NITSCHKA
GREGORY OLENDER
TED POLEN
JOHN PRICE
GARY QUIRK
JOAN SCHICK
DONALD SHERRY
CHARLES WELBAUM
CLAYTON WERNER
TIMOTHY WHEATLEY

EDWARD WORKMAN
Alto, Michigan
TAU OMEGA PI
APPLIED TECHNOLOGY HONOR SOCIETY

Forest Technician members of Tau Omega Pi: Mark Bale, Jim Dougavito, Gary McFarland, Mike Burzynski, John Stealey, Ray Sinai.

Tau Omega Pi was organized in 1968 to provide recognition for those students in the School of Applied Technology whose academic standing is in the upper 6½% of the school’s enrollment. The functions of the society range from providing prestige for the individual to various activities which are carried on throughout the year.

Some of the activities held during the past year were election of officers, selection of an honorary member, selection of an advisor, social and business meetings held every quarter, and the Spring Dinner Get-Together. Also in the Spring Quarter invitations were sent out to selected Freshmen, inviting them to become members of Tau Omega Pi.

This year’s officers were Mark A. Bale—President (Forest Technician), Debra Beloy—Vice-President, Gary McFarland—Secretary-Treasurer (Forest Technician), Douglas Collings—Public Relations Officer, and Mr. James Dougavito—Advisor.
WILDLAND FIRE MANAGEMENT CHALLENGES

“Officers of the Forest Service, especially Forest Rangers, have no duty more important than protecting the Reserves from forest fire.” So stated the Use Book, or manual of instructions given early employees of the Forest Service. The principal instruction given to new Rangers was to “patrol your District and watch for smokes.” Over eight million fires have burned over a billion acres of wildland since those days in the early 1900’s.

As the population of the United States grew, it finally became more aware of the fact that wildland fires were an unnecessary form of destruction. The forestry profession, primary wildland fire fighting profession in the U.S., has survived this “trial by fire.” In the process of experiencing many millions of man-hours of fire fighting, the record has improved considerably to the present. Although accurate data on wildland fires was not kept prior to passage of the Clarke McNary law of 1924, the record published by the U.S. Forest Service for the past fifty years is impressive.

In the five year period from 1924 to 1928, an average of 120,769 fires burned 32,133,492 acres, or 1.4 percent of the total U.S., each year. In the five years from 1969 to 1973, an average of 103,801 fires burned only 2,068,885 acres each year, or less than .1 percent of the total U.S. This amounts to a 14 percent reduction in the number of fires and a 93.5 percent reduction in the acreage burned each year.

Put another way, the size of the average fire, nationwide, has been reduced from 266 acres in the period 1924-1928 to

The modern smokejumper, a primary means of quick initial attack in remote areas of the western United States.

U.S. Forest Service photo

Highly trained fire crews with shovels and pulaskies board a helicopter for speedy travel to the fire area. They arrive fresh and ready for the hard work ahead. “It sure beats walkin’.”

U.S. Forest Service photo
less than 20 acres at present. This represents a reduction in the average fire size of roughly 93 percent. More indicative of the efficacy of our current wildland fire suppression efforts is the fact that 87 percent of the fires are kept less than ten acres in size and 98 percent of our current fires are kept under 100 acres in total area burned.

Even these figures do not tell the whole story, for only 176 million acres were under some form of organized protection in 1917 and, according to Davis, this had increased to about 400 million acres by 1930. Currently, 1,287,430,000 acres, or 91.59 percent, of the total wildland area of the United States is protected.

The reasons for the increase in efficiency are numerous. In the early 1900’s, the Ranger detected fires while riding the ridges on horseback, and put them out using an axe and a shovel, often working alone or, if he was lucky, hiring a crew of cowboys or miners to help him. Since then, the internal combustion engine has almost completely replaced the horse as the means of powering human transportation. Man has developed the machines that enable him to fly over the forest and indirectly ‘sense’ the heat from small fires rather than climb mountains and trees to visually sight the smoke produced by burning wildland fuels.

Besides being a useful tool for detection, the airplane has become a means of initial attack on fires through its smokejumper, water and retardant dropping capabilities. Helicopters have also been invented and improved to the point where they can quickly transport men and equipment to fires in remote areas—fires which used to take hours and days for a man to reach on horseback or foot.

The transportation systems in many of our wildlands have been developed and improved to the point that tractor plows, bulldozers and tankers, all unavailable in the early 1900’s, can now be driven quite rapidly to within reasonable distances of burning areas. Instantaneous communication is now available by means of short-wave radios, and we have even learned to improve the efficiency of water as a means of extinguishing fire through the addition of retardant chemicals or wetting agents.

Basic research into the combustion of wildland fuels and the behavior of wildland fires has been important as our fire fighting agencies have developed the tactics and strategies for the efficient employment of men and machines utilized in fire suppression. And our fire suppression crews are well trained. In 1900, nobody had even thought of a fire simulator composed of projectors, radio equipment and sound effects that could effectively train members of a fire overhead team.

Even though the ‘age of technology’ has improved our ability to detect and suppress wildland fires, the basic job of the firefighter has still not changed much. It is still the hardest, most filthy, most frustrating type of work a forester may have to do. The shovel, pulaski, and fire rake are still basic tools which must be used, if not for control purposes, then at least for mop-up. There are still too many fires which seem to defy the efforts of the initial attack crew, jump their firelines, and nullify many hours of fire line construction. Tired crews must still pull back, start again to build another deeper and wider fireline, and watch as more vegetation burns.

One major change in philosophy in the past few decades has been the shift from the notion that all fire in the woods is bad to the idea that some fire, kept under control, is desirable and even necessary. The prescribed use of fire for fuel, disease, wildlife and vegetation management purposes has been a traumatic experience for some foresters as well as many segments of our general public.

This aerial oblique photograph shows one of the major objections to the use of controlled fire to wildlands. The smoke is unsightly and reduces visibility, even though it is quite environmentally safe from a pollution standpoint.

U.S. Forest Service photo
population. The annual rate of applying some form of controlled burning to the forests of this nation probably approaches 3 million acres or more at present. Viewed in the perspective of the wildfire alternatives on most of this acreage, this use of fire does not seem excessive. We may, in fact, have to double or triple the rate as we intensify management in these forested areas in the future.

The problem of visibly polluting the atmosphere with smoke remains one in which the profession must again put its talents to work in educating the public. Few people seem to realize that woodsmoke is mostly water vapor, that fire only puts products into the atmosphere that the processes of decay and decomposition also put there, and that the mechanical treatment of vegetation (an alternative commonly proposed) pollutes the atmosphere with sulphur and nitrogen oxides, aldehydes, and organic acids which are not produced by open burning. The differences in feasibility, due to topographic and economic factors, also point towards an increased use of prescribed fire in the future.

The most recent change in fire policy which further burdens the wildland management profession with controversial criticism is the "let burn" policy instituted in some of our park and wilderness areas. Many of these areas have shown that the exclusion of wildfires in the past has not been compatible with the maintenance of the diversity or uniqueness of the vegetation which we sought to ‘preserve’ in the first place. The replacing of the natural fire regime with prescribed fires has been necessary for years in the Pine Key of the Everglades National Park, and more recently in some

A prescribed fire for slash reduction and seedbed preparation on a cutover area in the Lake States is started when the burning conditions are "just right." A planting machine will easily be able to reforest this area after the fire consumes most of the slash. The species planted needs a mineral soil, lots of sunlight, and no competition from ground cover or brush.

U. S. Forest Service photo
One way of keeping hardwood competition out of the pine stands is by using light surface fires to kill the hardwoods. The more fire resistant pines survive these light fires quite well.

of the Giant Sequoia groves of California. But letting lightning caused wildfires burn, unhindered and unsuppressed, within our wilderness areas approaches bureaucratic lunacy in the minds of much of our population.

The fairly large fire in the Grand Teton National Park during the summer of 1974 is a good illustration. The fire spread at an average rate of only forty acres or so per day—not an extreme rate of spread by any standards—consumed over 3500 acres of accumulated fuel, and will add to the future diversity of the age classes of vegetation within the park. Because it burned for most of the summer, produced an unsightly smoke plume most of the summer, and represented a devastating loss by temporarily blackening 3500 acres of green vegetation, local residents who had been either favorable or indifferent to the 'let burn' policy when it was proposed, became indignant at the fire's existence. Perhaps the general public defines the conflagration alternative in different terms than does the forestry or land management profession?

These areas, where the public perceives problems differently from the professional land manager, are the most challenging ones we face in the future. This is especially true in regards to fire management, for the presence of any wildfire, except for the very smallest of them, is still an awesome, frightening, potentially devastating phenomenon to most people. As professionals, we have our work 'cut out for us.

Roughly 90 percent of the wildland fires are man-caused. Many of our prescribed fires are not very controlled. And certainly the occasional forest visitor does not make the distinction between an uncontrolled wildfire and "safely burning" wildfire.

The greatest challenge to the fire management professional is going to be in the education of the wildland visitor, rather than in the management of fire. Without both public and political support for the things we are trying to accomplish, we will not be allowed to try them. If this happens, we will all revert back to being fire fighters rather than evolve into the fire managers we must be if we are to accommodate the increased use and productivity of our wildlands by an increasingly demanding population.

by Roswell K. Miller
THE LAST 20 YEARS
— Ford Forestry Center in Perspective —

The Ford Forestry Center was established November 30, 1954, when the Ford Motor Company Fund donated the community of Alberta, including its excellent band sawmill, and 1,073 acres of adjacent timberland to Michigan Tech. Since then, additional forest land nearby has been added until the research forest totals 4,110 acres. Alberta was conceived in 1936 as a model, self-sustaining sawmill community in the heart of the extensive Ford forests. Completed in 1938, it was an outgrowth of Ford Motor Company interest in management of its hardwood timber for sustained yield. Today, the Ford Forestry Center is one of three departments comprising the School of Forestry and Wood Products of Michigan Tech.

The Center functions as an educational, research and demonstration agency of Michigan Tech. The forest land, the sawmill, and other facilities are used for research in forest management and wood utilization, and for the demonstration of both new and accepted principles and practices in forest production and wood utilization. In addition, the Center’s specialized training programs for the sawmill and related wood-using industries of Michigan have drawn international acclaim.

THE RESEARCH FOREST

The Center has been actively engaged in establishing a well managed research forest since its beginning with State appropriations in July, 1955. In addition to the original grant of 1,703 acres of Ford’s previously selective logged forest, the Center acquired 2,400 acres through state and private grants. The Center is ideally located in that it is composed of a diversity of forest and soil types, thus allowing for the study of many forest conditions.

Approximately 80 research studies have been initiated in silviculture, forest management, and primary processing of forest products. Many long term sustained yield studies necessitate remeasurement of trees on permanent sample plots at 5 or 10 year intervals. Over 1,000 Continuous Forest Inventory (CFI) plots are maintained, providing more than 40,000 individual tree records.

COMPUTER AGE IN FORESTRY

Use of these CFI plot measurements requires a means for computation of the large volume of data generated, as does the Center’s intensive sawmilling studies and large scale cooperative forest-soils productivity study. In solving these problems of data computations and analyses, the Center has become a front-runner in computer application to forestry for both research and industrial purposes. This research augments the educational areas, too, with Center staff maintaining offices on the main campus to better serve as resource people for the entire School of Forestry and Wood Products. Special projects for undergraduate and graduate students are encouraged.

FOREST SOILS

Research concerning the relation of soils to forestry is composed of three areas of study: nutrition and fertilization of high quality sugar maple in old growth sawlog stands, growth and productivity of forests in the Upper Peninsula, and vegetative stabilization of mine mill wastes.

The forest-soils research program at the Ford Forestry Center is aimed at developing basic forest-soil-tree growth relationships. These will ultimately provide the forest industry with information conducive to intensive forest cultivation.

Vegetative stabilization of mine mill wastes has been accomplished on about two hundred acres of iron and copper wastes previously unvegetated. Positive results have also been obtained from research concerning forest fertilization and forest-soil productivity studies.

Twenty years ago at the Center’s dedicatory luncheon, Allen W. Merrell, Vice president of the Ford Motor Company Fund stated, “The Ford Motor Company Fund believes the sawmill community of Alberta can best benefit the economic future of the Upper Peninsula as an instructional facility operated by the Michigan College of Mining and Technology. In making this contribution, the Fund is convinced that the College’s research in forest management and wood processing will be a significant key to Upper Peninsula prosperity.” Observations by industrial leaders and educators alike indicate the Fund’s decision was a correct one.

Roger Rogge
Heretofore, thinning for timber stand improvement (TSI) has been done almost exclusively by chain saw. The cut trees were left in the woods because it was not economically feasible to remove the material and use it. The trees left in the woods are a vast resource called forest residues. It is estimated currently that annual recoverable forest residues have the potential of equaling the estimated 71 million cords of roundwood pulpwood required by 1980. However, in all areas of forest residue recovery, methods and equipment are needed to improve the economics of harvest and transport of forest residue materials.

This past fall a major study was conducted by the Forest Engineering Laboratory in cooperation with Michigan Technological University and the Michigan DNR to determine the economics of recovering the felled material from a silviculturally acceptable mechanized thinning operation in a northern hardwood pole stand.

Fifty acres were treated with several thinning patterns (fig. 1). The area was stocked with pole-sized mixed hardwoods and some hemlock. A conventional cruise indicated an average of 13 cords of pulpwood and about 2700 board feet of sawtimber per acre.

The study was designed to: 1) obtain the time spent on each phase of the operation; 2) assess damage to the residual stand; 3) determine effect on the forest floor; and 4) observe the long-range benefits in growth of quality timber.

A JD544 feller-buncher sheared the trees and placed them into bunches to be picked up by a Clark Ranger 667 grapper skidder. The bunches were skidded to a landing where the majority of the material was chipped by a Trelan whole-tree chipper and blown into vans. A few sawlogs were cut out. The sawlogs were transported to a local sawmill and the chips were hauled 22 miles to Hoerner-Waldorf's mill at Ontonagon, Michigan.

Normally, a five-man crew was involved in the harvest and transport phases. One and sometimes two drivers were hauling chips to the mill while the others were operating or maintaining equipment. Forest Engineering Laboratory personnel were present at all times collecting time study data on the total operation. This is now being reduced and key-punched to provide information for a thorough analysis.

Preliminary data analysis shows that mechanized thinning of hardwood poles can be accomplished economically if the wood fiber is commercially utilized. Withholding final judgment until all data is analyzed, it appears that strip cutting with selective cutting within the leave area is the most efficient. A comprehensive survey of damage to the residual stand has not been completed; however, a walk through the area indicates the damage to be relatively minor. Most damage occurred at the base of trees located at the ends of the strips. These trees became pivot points when the skidder made the turn from the strip onto the main haul road. Crown damage appeared to be light, not exceeding that of a conventional thinning. Plans are being made for a future study of strip thinning in a larger area.
A DIFFERENT PROJECT IN THE IWR

Particleboard and molded pallets are not the only projects currently receiving attention at the Institute of Wood Research. Effort is also being directed toward another project—organizing a library. For over two decades the staff at IWR have been collecting books, technical and trade journals, and government documents to support their research efforts. Housing and managing a steadily growing collection of materials, however, require physical space and staff time. In response to these demands, IWR decided last year to convert an office into a library, and to ask a librarian for assistance in organizing the collection.

Twenty-five years of information gathering by IWR staff members have produced a collection of considerable depth and variety in the area of wood science and utilization. The library's periodical holdings include sixty-five titles, among them American, British, Canadian, and German publications. Of those sixty-five titles, the library currently maintains subscriptions to thirty-five journals.

In addition, the library houses about 800 books and hundreds of American and foreign government documents. The American documents in the collection originate primarily from the Forest Service, its eight forest experiment stations, the Forest Products Laboratory in Madison, Wisconsin, and the Institute of Tropical Forestry in Puerto Rico.

The library also has in its collection patent literature, photographs, newspaper clippings, industrial equipment literature, and in keeping with current trends in information science, subject bibliographies produced by computer searches, and microfiche. The Institute of Wood Research recently purchased a microfiche reader-printer for the library. As well as providing a convenient means for reading microfiche, the reader-printer is also designed to produce paper copy of microfiche images.

Building a library, however, involves more than collecting books and other information materials; those materials must be organized for effective use. Organization involves, first of all, "cataloging" all works in a collection, i.e. creating records which describe each item owned by the library. These records appear most often in the form of catalog cards, and occasionally as machine-produced book catalogs. The records must then be arranged in some logical order, so that a user can determine if the library has materials on a particular subject or if it has a specific work. Because a catalog usually contains at least author, title, and subject records on all materials, a user can search for a particular item even if he lacks complete bibliographic information.

The next step in collection organization is the arrangement of library materials on shelves and in file cabinets, etc., according to a classification symbol. That symbol is determined by analyzing a work's contents, and is taken from which ever classification system a library has chosen to use. The classification scheme adopted for the IWR library is the Oxford system. It was devised especially for forestry literature, and has been in use as the "Oxford" system since 1953. In 1957 it was incorporated in the Universal Decimal Classification system, a British system derived from the American Dewey Decimal Classification system. The unique aspect of the Oxford system is that it provides for a "classified catalog": all subject cards in the catalog are arranged by classification number (ex: 892.4) instead of by subject words ("bark products").

The tasks of cataloging and classifying library materials at the Institute of Wood Research have only begun, and considerable time will be required to complete those tasks. However, the benefits to be derived from a well-organized and maintained library collection are numerous. Very basically, information is the prime ingredient in research and development efforts, and access to information by informed library users is vital to the work of IWR.

—Cindy Plisch
FOR Forestry Club 1974-75

For the most part, members of the Forestry Club were an active group this year. The Club again competed in Homecoming, Winter Carnival, and all the major intramural sports. The club also participated in "Tech Is," the engineering show held every other year on campus.

This year, the Club held its second annual pulp-cut in November to raise funds and it appears as though it will continue to do so in the future. The pulp-cut is very popular with members and non-members alike and it gives students a good insight into the woodworkers' point of view. In addition to the Fall pulp-cut, a second one was held in May in order to begin increasing funds for the '76 conclave, which Tech will be sponsoring.

In addition to the need for more funds, the club has been faced with other challenges, many of which are centered around the Otter River camp. One problem facing the Forestry Club and the Department now is the use of the Otter River Camp. As the Forestry Department expands, so are the interests of its students, as demonstrated by the chartering of the Michigan Tech Chapter of the Wildlife Society. Traditionally, use of the Otter River Camp has been reserved for Forestry Club
members and their guests. However, this is now being challenged by the Wildlife Society, and rightly so. Personally, I feel by opening the Camp to other Forestry Department organizations the camp can be improved. Use will probably not increase significantly, but the number of people to help with camp maintenance will, and there is rarely an over-supply of labor on work days at Otter River.

Over all, the club had a pretty good year with just the usual problems, such as dates arriving two weeks earlier than anticipated.

*by Keith Richmond*

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1975-76 FORESTRY CLUB OFFICERS

*Chief Forester* — Bill Perkis
*Treasurer* — Mark Zambo
*Assistant Forester* — Bill Anderson
*Secretary* — Laura Maguire
FOREST TECHNICIANS AT ALBERTA

Ford Forestry Center has been home to the forest technicians since Fall, 1971, when the program was moved entirely to Alberta, 40 miles south of the Houghton campus. In January, 1975, the Department of Applied Technology, which administered the program, became the School of Technology with Professor Gerald Caspary as Dean. Bernard W. Carr was named coordinator of Forest Technology.

The school is proud to have one of its staff members, James P. Dougavito, serving on President Ford’s clemency board. Jim is one of nine people in the U.S. appointed to the board, and, since September, 1974, his time has been divided between Alberta and Washington, D. C.

Mr. Irv Ziemer has been an instructor in the Forest Technology program since October, 1974. He is temporarily filling in for William Bertie who has been on leave for several months. Irv has had 10 years experience as a forester with the Northern Hardwoods Division of Copper Range Company.

Mr. Edward Stevens of Hancock is our new English instructor, replacing Steven Cardeau, who is currently pursuing a Masters degree. Mrs. Barbara (Sandy) Buckler has been secretary to the Forest Tech staff since September, 1973.

Forest Techs have always been known as “doers” and each year the scope of their activities broadens. The Alberta Council has been formed to encourage student participation in activities between Alberta and Houghton.

Tau Omega Pi, the Associate Degree Honor Society, elected two Forest Techs to office in 1974: Mark Bale, President and Gary McFarland, Treasurer. James Dougavito is their advisor.

Forest Tech’s snow statute at Alberta won a second prize in Winter Carnival, and the students made their theatrical debut with a skit under the direction of Ray Sinai. The Alberta branch of the Forestry Club continues to participate in all club activities in addition to many local events.

The Alberta Forestry Club
THE STUDENT CHAPTER OF THE WILDLIFE SOCIETY

In January 1974 the Michigan Technological University chapter of The Wildlife Society received its charter from the parent organization in Washington, D.C. The Wildlife Society is the professional organization for wildlife science and management.

The Chapter was gotten off to a very active start and spent the year working on several projects. Under the guidance of Dr. Norman Sloan, the Chapter has undertaken a study in small marsh management. This involves making waterfowl surveys and censusing breeding songbirds in the study area. This past year the members prescribed several management procedures. Plans to do a prescribed burn this spring had to be postponed due to wet weather conditions. The Chapter is currently considering burning in the fall.

Several weeks during the winter were spent working in cooperation with the Department of Natural Resources on a deer collaring project. The collars were set up by the members and checked daily. While only one deer was collared, those who participated gained valuable experience which they will be able to use in the future.

The first annual smorgasbord was held in March and was deemed a great success by all who attended. A special thanks goes to Norm; for without him much of the wild game would not have been prepared so well.

This spring 150 bluebird houses were built by the students. These houses were distributed on various farms throughout the area.

Dr. Sloan and Dr. Stormer, co-advisors of the Chapter, are encouraged that the student chapter will serve as an organ for developing professionalism and further expand the educational opportunities for wildlife studies in Michigan’s Upper Peninsula.

—Ann Leach

School year 1974-75 is fast coming to an end and for the Alpha Eta Chapter of Xi Sigma Pi, Forestry Honor Fraternity, oops—I mean Society—our ranks have been blessed with members of the female gender—it has been a year of some new and some old activities. We have gained some new faces and lost some old ones. One of the new activities for the Society is our participation in Tech Is . . . ! Along with the Forestry Club we set up displays, both inside and out, showing what forestry is all about. While the Forestry Club took care of the incidental things like rubber-tired skidders and logging trucks outside, we took over a large part of the Union ballroom and showed the important aspects of forestry such as multiple-use sustained yield concept, forest protection, recreation, wildlife, soils, paper making, and yes, Dr. Sun, we let everyone make a piece of plywood, Ah so!

Another new activity was what we called the Noon­ Hour Seminar. While most forestry students are of the hard working type, there are others known for their ability to relax anywhere, anytime and under any circumstance. It was with them in mind that we devised the Noon Hour Seminar. Of course, the hard working type were allowed in as a kind gesture on our part.

The object of these seminars was to inform the student, forestry or otherwise, of what was happening in forestry and related fields. Speakers from the University, U. S. Forest Service, industry, etc., spoke to us at lunch time, which for most of us is the noon hour. Hence, the name Noon-Hour Seminar. Clever, yes?!

Two initiations were held—one in January and the other in May. Thirty-five new members were thus added to the membership. After each initiation ceremony everyone attended a banquet and, quite naturally upheld the time­ honored tradition of all foresters—the raising of glasses on high. Many times!!! All concerned had a 'hie' of a good time.

For those of us graduating—it is with mixed emotions that we do so. Many friends have been made here but, we look forward to making many new ones in our chosen profession. Tech seems, after four years, a second home where many challenges have been successfully met. It is now time for us to meet new challenges, and hopefully, we will meet these with equal success. One of the aims of our Society is to be a credit to the field of forestry and that is what we must and will be.

David M. Bergman
Forester
Alpha Eta Chapter
The biennial engineering show, "Tech Is", was held again this year with Forestry making up darn near half the show. For openers, the Forestry Club had a display of logging equipment and products outdoors near the Union. The display featured a rubber-tired skidder and a typical logging truck along with a display of cedar products. White Pine logs, Cedar logs, and a bulletin board with photos of logging equipment in action were also included in the display. Inside the Union, both Xi Sigma Pi and Ford Forestry Center had displays set up. Xi Sigma Pi's exhibit presented an overview of many different aspects of forestry, such as ecology, wildlife, soils, etc. The Ford Forestry Center featured a display which explained the fieldwork aspect of the forestry profession. Included were firefighting tools, surveying equipment, etc. The show provided a good opportunity for us foresters to explain our profession to the public and help them understand what's going on in forestry today.

Yes, there were some interesting displays to be viewed!

Well, shall we knock over the Chem-Met building?

Would you believe these were cut in the U.P.?
THE 1975 MICHIGAN TECH "FORESTER" STAFF

Editor-in-Chief: Catherine Riley
Assistant Editor: Ann Leach
Business Manager: Tim Foss
Photo Editors: John Ball, Tom Tauchus
Advertising: Sue Yocum, Terry Patterson
Production: Dave Gundy, George Teachman
Advisor: Dr. C. Richard Crowther

Sue in one of her better poses.

Only 88 pages left until we're finished, Ann.

John, you're at the wrong end of the camera.

Another year has come and gone and with it goes another issue of the Forester to press. The staff did an excellent job this year on the book. It was even finished on time! My thanks to all of those people who contributed stories and photos for use in the Forester. I hope the editor next year gets as fine a staff to work with as I have had this year. Thanks.

—Cath

Tom doing what he does best.
Headache number 1975, Dick.

What does she want me to do now? George

What do you mean none of the pictures turned out? Cath.

Staff meetings are always fun, right Dave?

Special Thanks to:
Dave Erickson—
Introduction pictures
John Ball—
Front Cover
United States Forest Service

I hope these books balance,
Tim.
One Day in the Life of a Summer Camper at "DA TECH."

Your alarm rings at 6 a.m. and you reach over and knock it off the desk and get up at 7:30. The bus leaves at 7:45. You make it with five minutes to spare.

Today you're working with the transits. You are headed for the Hancock gravel pit to take the data necessary for a topo map. Today is the last day to take sightings.

You're finally set up and it is now 9 a.m. You start hand signalling your rodman in the direction you want him to move the rod. He doesn't respond. So now you start yelling at him. No good. He's 800 feet away and he can't hear you. By now, not only is the sky above you blue but so is the air around you. You're notetaker is blushing—she's never seen the air bluer than the sky before.

You move quietly down to your rodman. Lo and behold the S.O.B. is sleeping. And why not—it took you 30 minutes to set up when it should have only taken five. Everything is alright now, there has been a round of apologies via a promised round of beer. You all start to work like the team you have become in the last four weeks.

Then you notice—thanks to your knowledge of sun shots that the sun is in the 2 o'clock position which means that it is noon and thus time to eat. Your partners have enough energy left to crawl 1001 feet to the nearest shade. Shade in a gravel pit, never! But you collapse near the transit because you lack the necessary energy. Besides, you've noticed that the unattended transits have developed the nasty habit of wandering off back to the bus, seemingly by themselves.

Lunch is over and now you are all back in the sun. More cursing takes place, because the rodman has collapsed on the notes and you're female partner has blackmailed you into becoming the rodman. Defenseless—hell.

Well it's all over now and all you have to do is calculate your angles and elevations and then draw the map. Made in the shade.

Simple huh? You've been on the phone about as much as you've been at your desk. The next thing you know is that the alarm rings. You look up from the desk to see that it has grown very bright outside. You now look back at your desk expecting to see the map done. Surprise, not only is the map not done, the paper is not even centered.

All the while you're getting ready for another day in the beautiful Copper Country you've been practicing the magic of making the air blue. Now, even your poster of Miss July is blushing.

You hike up the hill to the BUILDING and suddenly you come to the revelation that today is Saturday, mainly because the buses aren't in traveling formation. Now you have the time necessary to apply the First law of surveying—When in doubt do it over again. Just think, next comes the cruising problem!
Dear Mom, I hope it starts raining soon.

Who? Me? — Jack

Tom, you said it was easy.

It's not that time yet Barry.

Hey John, maybe you better give him a hand.
BIG BROTHER DAY

Fun and friendship were the keynotes of this year's Big Brother Day held at the Otter River Camp. The day started off a little slow at about ten o'clock, unusual for a forester. By mid-day there was a good size crowd of aspiring foresters on hand. As usual everyone wanted to try their hand at the more popular events—one-man buck, two-man buck, log roll, match split and the ever exciting tobacco spit. The competition this year seemed to instill a lot of interest in the up coming Conclave.

Those who had competed in the morning events welcomed the lunch of good ole franks and beans. The afternoon was also filled with a lot of fun especially when it came time for the egg toss. Many teams including faculty, participated and for a while it looked as though the freshmen might win the event until one of the "youngsters" decided to catch the egg in her head!

Of course it wouldn't have been Big Brother Day without the traditional Otter River "bath" of the President of the Forestry Club. Keith took to this dunking with all "eagerness," but not without taking three of his "friends" in with him.

The day ended with a bang when a group of clay pigeon hunters went up to the trap range for a little shooting but whether a spectator or participant in the days events fun and friends were common to both.

Barry Lempe and Mike Underwood

Row, Row your rubber raft...

It takes grit and determination, Nancy.

Maybe if we stand here long enough, these logs will roll off by themselves.
Are you thinking what I'm thinking... 

I think he missed the boat.

Don't make waves!

Me Tarzan or is that monkey?
HOME COMING

This year, the Forestry Club renewed its participation in the traditional Homecoming challenges. After a lot of last-minute scrambling, we managed to organize and enter teams in pyramid-building, the relay race, the chug-a-lug, and tug-of-war. The competition in class III was pretty strong this year, but we still managed to pull a second place in the chug-a-lug. This was due to the fact that we had some of Tech's foremost chuggers on the team. Although our pyramid collapsed and we didn't take anything overall, we still had a great time.

Tim Foss

One more down the hatch—Bill

P-P-u-l-l-l

And the twigs came falling down!
1st and 2nd prizes—Winchester rifle and Camptrails Pack and Frame.

3rd prize—Snowshoes

**RIFLE RAFFLE**

This year the Forestry Club made a profit of 530 dollars. The drawing was held in November in the Union. Although we were unable to persuade the Homecoming Queen to make the drawing we were able to conjole one of our own forest beauties to make the drawing—Pat Timonen.

As in the past we had typical outdoorsman prizes; a Winchester rifle, a pair of snowshoes, a backpack and other sundry goods.

Don't keep us in suspense, Pat!
Conclave is a special kind of competition that foresters wait for each year where they can demonstrate their skills in forestry related events such as dendrology, traverse and the ever popular tobacco spit, just to name a few. The team that went down to Ann Arbor for the Conclave put on a fine effort and finished fifth overall but this is not truly representative of their capabilities. A disqualification in one of the events prevented the team from taking third place.

Some fast canoeing in the special event, in which we were later disqualified, by Ed Shibler and Keith Richmond put us in second place but we soon grabbed the lead when Rod Dykehouse from the FFC dropped the pole in the pole felling almost perfectly on target. Next Bill Perkis and Mike Burket built a fire and the water was boiling in no time at all for a first place finish but it turned out that early in the event our canoeist jumped out of the canoe a wee bit early resulting in a disqualification.

In the bolt throw, we captured two spots—Mike Ojanen placed second with a 25.1 foot and Bob Wilbur placed fourth with a 24.5 foot toss. Mike Burket placed fourth in the traverse event which requires exceptional skill in the use of a compass and accurate pacing.

Keith Richmond could be described as the show stealer since he earned the title of “All Around Forester” by accumulating more points than any other single competitor. He placed first in speed chopping and traverse and also took a second place in another event.

Missouri took first place overall for a second year in a row followed by Purdue, Michigan, Minnesota and then Tech. The rest of Tech's team put in a great effort and should also be congratulated. The remainder of the team consisted of Mike Underwood and Joan Cryderman from the main campus and Jack Taco, Ken Barlage, Ed. Larson, George Hudson, and Bill Curtis all from the Ford Forestry Center. A special thanks should also go to the two advisors Roswell Miller and Ralph Duffek who braved the trip and rounded out the team.
A winner — Chicago!

O.J. the saw belongs in the cant.

Dear Mom: My event was the one man teter-totter.

The match this time okay?

Ballet

Pencillus cedrus, right Mike?
On Saturday, November ninth, the Forestry Club held its second annual pulp cut. This year as in previous years it was held at the La Croix Plantation owned by the Copper Range Company and located near Atlantic Mine.

Seventy-five students and several of the professors from both Tech and Alberta showed up for the day of work. After four and a half back-breaking hours, twenty-eight cords of red pine had been cut and piled along the road for future pick-up. Quite a profit was made from the sale of the pulp which will later be spent for future club activities.

To finish off the day, a get together was held at the Halfway Bar where food and refreshments were served. The only thing that marred the days activities was when a Tech student was hurt when a tree fell on his head. He had worn his hard hat which had saved him from serious injuries, and only suffered cuts and bruises.

The Forestry Club thanks all those who participated.

Mike Burket
Remember now Bill this is a POWER Saw!

The correct way to paint a tree.

Look out Halfway, here we come!

The correct position for a quick departure.
THE OTTER RIVER CAMP — THEN AND NOW

In the year 1932, the State of Michigan acquired title to 160 acres of land located just west of Elo in Houghton County, through which the Otter River and Bear Creek flow. The Otter River Trout Rearing Station was located here and put into operation in 1933. Its output of 8-month-old trout was distributed widely throughout the many streams of the Copper Country.

In the late 1920’s, the Michigan Grayling was only known in a small section of the Otter River. Previous attempts to re-establish the fish in its former native range had resulted in utter failure. Attempted transplants of Montana Grayling into several areas had also failed. The Otter River Trout Rearing Station was located on this small section of the Otter River where the Grayling survived in the hopes of reestablishing the species. Because the Grayling was so rare, all fishing was prohibited in a four-mile long section of the stream.

Satisfactory production of Brook and Rainbow Trout was achieved, but, after many years of unsuccessful netting by the Conservation Department in attempts to obtain brood stock, the sanctuary for Michigan Grayling was discontinued. At the end of the 1938 fishing season, it became evident that few, if any, of these fish still remained. No reports had been received that year of any Grayling being taken from that portion of the stream which had been previously closed.

In 1939, torrential rains causing high waters flooded the rearing ponds, resulting in considerable damage to the dams and screens, as well as very heavy losses of young and legal-size fish. New concrete head dams were subsequently installed. In the same year, because of no authenticated reports of capture of the Michigan Grayling, the species was declared to be extinct.

In early 1941, the station again suffered extensive flood damage. This time the waters endangered the caretaker’s cabin there. These floods resulted largely from changes in the drainage area of the Otter River from forested lands to agricultural lands. This latest flood also partially washed out the main bridge over Otter River and the head dam on Bear Creek. Repairs were made to the bridge (the lower wooden bulkhead was replaced by a concrete structure), but the Bear Creek series of ponds was abandoned. In the same year, an electric line was put in to provide light and power to the cabin.

The next year, a new wooden shingled roof was put on the caretaker’s cabin and other repairs were done, including the replacement of the head dam and several wooden bulkheads, the drilling of a well, and the rebuilding of the icehouse and food room.

In 1949, an artesian well was developed to supply water to the cabin and food room. A 5-inch pipe was sunk to a depth of 168 feet where water with a temperature of 46 degrees was found. The need for the station was reduced in the late 40’s and early 50’s by the continuance of the fingerling trout planting program, and the station was subsequently closed.

It had been abandoned for several years when, in 1955, the Conservation Commission approved the transfer of the station to the Forestry Department of Michigan College of Mining and Technology, which had indicated an interest in the area. The school acquired 20 acres of land including the caretaker’s cabin and outbuildings, approximately a quarter-mile of river frontage, and a 33-foot strip for the access road. Mineral rights and the right of public access and egress to the stream were reserved by the Commission.

The new property was entrusted to the Forestry Club who renamed it the Otter River Camp. The camp has been a constant source of challenge and
hard work for club members who are responsible for its maintenance. One of the first projects of the club was the complete removal of the old bridge and dam at the camp because, after several years of neglect, the bridge had fallen in, and the resulting pileup of floating debris caused very bad flooding conditions each spring. These floods also caused serious decay of the Spruce logs which had originally formed the foundation of the cabin.

In 1956, the roof of the cabin over the back bedroom was again reshingled and some of the porch floor joists were replaced. A "lift-barrier" type gate was also installed at the entrance. In the same year the water pipe was disconnected from the cabin and rerouted to where it drains today near the sauna. A large stone and cement cistern was installed in the water line as a place to keep freshly-caught trout. Kitchen cabinets and sink sideboards were built by the maintenance department of the school and installed in the cabin. The sink was drained to the cutoff around the island. A concrete porch floor was laid down and six double bunks were installed during 1957.

Plans had been in the forming for the replacement of the bottom logs of the cabin, which were very seriously rotted. With financial aid from the alumni work began in 1957. It was decided to lift the cabin with house jacks, one corner at a time, and replace the logs with a 2-foot high foundation of native sandstone. The sandstone blocks came from two houses which were being torn down on campus to make way for the Civil-Geology building. The work on the foundation was completed in 1959.

Bank erosion problems due to high waters from the spring melt were partially alleviated by the dumping of rock on the cut back side of the river.

For the next couple of years, bridge building took up a major portion of time for the Forestry Club. In 1962, work began on the construction of a wooden A-frame type bridge to span the Otter. This bridge lasted only a few years before it too was washed out. In 1967, the present cable suspension bridge was put up over the Otter River. In the same year a large brick kitchen stove was dismantled and replaced with a cast-iron wood-burning range. In the mid 60's, the old icehouse finally caved in and was torn down and a sauna was also built as an added luxury.

In 1970, the metal gate was built by Alberta and was installed at the top of the hill by the parking lot. In that year, the river bank was again reestablished with the aid of the Michigan DNR. The latest major project took place during May 1973 when the main part of the cabin was entirely re-roofed. The old roof had been examined by the civil engineers at Tech and they were amazed that it was still in one piece. There is still some work to be done on the inside of the cabin, such as sanding the roof beams, varnishing the ceiling, and hanging an adequate light fixture from the new ceiling. Plans for this are in the future.

Even though much work is required to keep the camp in good shape, it is time well spent. The fruits of labor all pay off when you go to the camp for a weekend of pure enjoyment. What better way to get away from all the worries of school for a while than to go to the Otter River Camp for a few days of roughing it. Come on down sometime. Do a little hunting or fishing, take a sauna and jump into the icy Otter River, do a little snowshoeing or cross-country skiing, or just cook some beans and hot dogs in the fireplace and spend a day hiking around. It's your camp—use it!

by Fred Wark

The old A-Frame bridge across the Otter River.
WINTER CARNIVAL 1975

Competition in the “Frozen World of Frost-bound Funnies” saw the Foresters taking second place (from the bottom that is) overall in Class III. Even though many long hours were spent building, redesigning, tearing down, and rebuilding our snow statue “Which Way to the Tech,” it was unable to capture the hearts of the judges or any points for that matter.

The Forestry Club’s skit didn’t do much better although it did make it past eliminations and into the skit revue. “You’re in College Now, Charlie Brown” didn’t get any points from the judges, but did get a lot of laughter from the audience. The cast had a good time anyway.

The Foresters also entered most of the special events; skating and dogsled, as well as taking a second place again this year in snowshoeing and broomball. All in all, it was good time for all those who participated.

Ken Klumpp
Professors and cooks were one and the same people for the annual Forestry Club Booyaw held at St. Albert's Hall last January. Thanks to someone's luck in the past deer season, the stew actually contained venison! Quite a few students and faculty attended the feast and enjoyed a slide presentation put together by Prof. Roswell Miller after the dinner. Ros talked about many of the moods that can be captured on film and shown in the form of color slides and how these pictures can be set to music to portray a certain theme.

There was no limit on the number of helpings of stew anyone could have so if anyone went home hungry, it was their own fault. Another great venison Booyaw!
THE 1975 BOWLING PARTY

This year as in the past the Forestry Club held their annual spring bowling party at the Copper Bowl in Ripley. There was quite an astonishing turnout for a fine Saturday afternoon. We reserved eight alleys, and by the time the party got rolling there were at least four people on each alley. Some even had five. The Juniors won this year partly due to the fact that they made-up the vast majority of the people present. High game and high series were captured by junior Ron Lewandowski. The professors took the team championship. Maybe next year we can reserve the whole Copper Bowl—bar and all!

Will you look at that!

Now George, this finger goes here and that one goes there . . . —Nancy

A gathering of twigs!
To start out the year we tried to put together a softball team but were eliminated after our first two games. It was a double elimination tournament. We had trouble finding time to practice because the weather was usually bad and when it was nice out we had a game. On top of that eighty percent of the team had never played slow-pitch, especially against pitchers that were allowed to use up to a ten foot arc in their pitches. Everybody was trying to blast the ball with all their power and all they hit was pop-ups or easy flies.

Our tennis team did a little better and we made it to the final sixteen teams out of 110 teams. We had a little help when two of our games were forfeited to us. We had a good time though and everybody had a chance to play.

Ping-pong was as bad as softball. We were eliminated right away and I had trouble getting people to the matches. I ended up playing in every match and putting my name on the roster for emergency situations only.

The horseshoe team did pretty good, we made it to the quarter finals before getting eliminated, and then only because of bad luck.

Bowling was not the best but it was not the worst either. At least we did not finish last. We were ninth out of twelve teams. We did not mind losing because we never took it serious. We goofed around a bit and had a lot of fun anyway.

The hockey team was in about the same condition as the bowling team. We won one game, tied one and had to forfeit the first game because it was the last Friday before Christmas break and everybody was gone. We needed a good goalie. Everybody tried to be a goalie but nobody wanted the job. At mid-season Tom Tauchus finally took the job of being our regular goalie and did a very good job, for never having been a goalie before.

The paddleball team tried hard but we were eliminated early in the season. We'll do better next year.

The basketball team was fair, getting off to a great start but blew it in the last three games and ended up third in our league. It seemed as though the referees were always against us, as is usually the case when you're losing.

To date the volleyball team has played one game and won it easily. We have a lot of height on our team, so hope we have the talent to win the rest of our games.

Later this spring we hope to get a team together for swimming, track, and archery.

Ed. Shibler
Athletic Director
FIRST ANNUAL BROOMBALL GAME

The first annual broomball game was held between the four year students at Tech and the two year students from Alberta but the Alberta gang never showed up. That didn't stop the rest of the twigs that did come from having an improvised game of broomball. Nobody had brought the ball to hit around the ice with the broom so a pop can was used instead. It was really an experience. The challenge now goes to the people down at the Ford Forestry Center for next year's game so we'll see you there.

Is that what they mean by a line?

You know Cath, I think this is the best seat in the house.
VARSITY ATHLETES

This year the Forestry Department would like to recognize the many Varsity Athletes who are also majoring in Forestry at Tech. Many of these young men have received honors in their sport for their outstanding performances. We'd like to congratulate each of these men on their accomplishments in the area of sports and we're proud they are also Foresters.

Jim VanWagner
John Smendsuik
Steve Courchaine
Fred Smith
Brian Glagola

John Sherman
Marc Angell
Tom VanWagner
Rich Ahler
Bob Huffman

George Michaels
John Chamberlin
Jack Winkler
Dan Condon
Steve Betleski

Bob North
Bill Anderson
John Guyette
Scott Gladstone
Steve Bartoszewski

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WILLIAM GARRY W. SOORUS, 202 Table Rock Dr., Marquette, MI 49855.

MICHAEL F. DEMEDIA, 1101 Lakeview Dr., Minocqua, WI 54548.

GLENN W. KRAMER, 11803 Burt Rd., Escanaba, MI 49829.

JA.L{ES JAMES, 2021 Water St., Portage, WI 53901.

JOHN W. SCHNEIDER, 312 Menard St., Portage, WI 53901.

DAVID K. BUCK, 201 Oak St., Bayfield, WI 54814.

DAVID F. HUNTER, 1711 W. Superior St., Chicago, IL 60607.

DAVID G. GRIMBLE, 4704 Falls Rd., Marcellus, MI 49067.

Miami, Fl 33156.

DAVID C. NALLE, 5111 Magnolia St., Toledo, OH 43614.

W. C. BAUMAN, 3111 Loyola Ave., Chicago, IL 60660.

KENNETH A. MANN, 11713, 12th St., Lafayette, In 47906.

BILLY J. KINSEY, 34902 5th Ave., Peninsula, WA 98371.

JOSEPH W. COOK, 3715 Nevada Ave., Berkeley, CA 94705.

MICHAEL L. HERRMANN, 415 W. Main St., Alton, IL 62002.

JOHN R. LIEBER, 201 W. Springfield Blvd., Hinsdale, IL 60521.

CLARENCE J. WIEGERT, 5480 N. Vermont Ave., Chicago, IL 60640.

WILLIAM R. FOWLER, 3331 5th Ave., Ogden, UT 84403.

JAMES L. WHITE, 351 W. Michigan St., Milwaukee, WI 53203.
WILLIAM HOWARD MCCONNELL, 210 East Street, Apt. 7, Houghton, MI 49931.

ELIZABETH CHARLOTTE MCFARLAND, 9000 Buchanan Rd., Houghton, MI 49930.

STEVEN EDWARD MOE, 1201 Evergreen St., Houghton, MI 49930.

ROBERT EDWARD MILLER, 613 River Hill Rd, Washington, D.C. 20016.

LAURENCE WILLIAM MUNCH, 401 Orion Rd, Rochester, NY 14603.

ERIK STUART MOORE, c/o Heath Consultants Inc., 100 Twiss Dr., Stoughton, MA 02072. Field Consultant, Heath Consultants, Inc., Stoughton, MA.

RAEFORD NELSON MURPHY, 536 East Ludington Ave., Ludington, MI 49431.

CRAG MARTIN MURRIS, 1002 So. 5th St., St. Charles, IL 60174. Salesman, Edward Mines Lumber Co., Carload Div., Chicago, IL.

RICHARD MILTON MURPHY, 1619 Bsewood, Royal Oak, MI 48073. Porter, Ford Motor Co., Troy, MI.

JOHN OSCEMA, 69775 Joy Road, Plymouth, MI 48170. Assistant manager of a lumberyard.

KENNETH LAURENCE O'DRISCOLL, Forestry Technician, U.S.F.S., 138 E. Old Stage Rd Po, Cowen Junction, OR.

DENNIS CHARLES OJA, 205 Copper St., Hurley, WI 54534.

STANLEY ALAN OULT, 16079 Fowden, Barrington, IL 60010.


Cemetery Sup't., Dale Cemetery, Owosso, N.Y.

DENIS POLK, 111 Tamarack St., intens, MI 49912. Ass't Manager, R & M Mfg., Chassell, MI.

JAMES CARL POND, 4233 Jeffy, Utica, MI 48087.

DAVID JOHN POQUETTE, 1613 Riverview Dr., Kingsford, MI 49801.

DUANE ALLAN PUDN, P.O. Box 193, Houghton, MI 49931.

ROBIN JAMES RENNIE, 13447 Letart, Drayton Hills, MI 49201.

CHRISTIANE ROBERT, 1014 College Ave., Houghton, MI 49931. Graduate Research Asst., Michigan Tech, Forestry Dept., Houghton, MI.

MRS. TERRANCE A. REESE, 324 West Lafayette St., Starkes, MI 49091.

Graduate Student, Ornamental Horticulture, Univ. of Florida.

DENNIS LEE RICHARDS, 816 Golf Lane, Wheaton, IL 60187.

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RICHARD DAVID SANDERS, P. O. Box 563, Tice, FL 33905.

TREVOR DEE SLUZITZ, c/o R. Schiltz, Land Consultants Inc., Richland, WA 99352. Forester, Delano Lumber Co., Land O Lakes, WI.

THOMAS CHARLES SHEPHERD, 9512 Edgewood Dr., Plymouth, MI 48170. Ans' Area Forester, Penniman St. Forest, Mich. Dept Nat. Resources, Forestry Div., Atlanta, GA.

RICHARD JAMES SIMON, 3009 Maplegrove, St. Clair Shores, MI 48082.

JAMES NATHAN SOUTHWORTH, 936 Lowelltown Drive, Pittsburgh, Pa. 15216.

CRAIG BARRON SPRING, 3133 Bonita Villa St., Dayton, OH 45431.

NORMAN CARL SPIESS, Box 296, Eagle River, WI 54521.

DAVID ROBERT SPINE, 133 Edgewood Ave., Chicago Heights, IL 60411.

LOREX ALFRED STAMLER, 1 Bell Ave., Matagami, Quebec, Canada. Pro Hockey Player, Los Angeles Kings, Pittsburgh, Pa.

Gerald Joseph STENKA, Route 1, Box 307, Gladstone, MI 49837.

MARY MARGARET STOLL, 527 Delta, Manistique, MI 49854.

MICHAEL SCOTT STRAIN, 507 W. Blackman, Harvard, IL 60033.


WAYNE ALFRED TAPPON, 3520-5th Ave., E., Menomonee, WI 53151.

LARRY JAY THOMPSON, 1726 Van Der Heide Rd, Sanford, MI 48657.

CHARLES EDWARD YANUS, 1795 Lashbury, Birmingham, MI.

DANA MICHAEL YARVIS, 900 Lakewood Lane, Marquette, MI 49855. Foreman, Varvil Lumber Co., Marquette, MI.

JOHN BLAKE WEISS, Lazy Days Trailer Court, Post Falls, ID 83854. U.S. Dept. of Agriculture, Forest Service, Coeur D'Alene, ID.

BRUCE JOHN WILLIAMS, 333 Front St., L'Anse, MI 49946. Allwood, Inc., Baraga, MI.

MRS. BRUCE JOHN WILLIAMS, 333 Front St., L'Anse, MI 49946.

MRS. GARY LEE WILLIS, Tarrace Edge Cottage, Chassell, MI 49916. Forestry Tech., U.S. Dept of Agriculture, Forest Service, Houghton, MI.

GRAHAM CHARLES WISE, 305 Connaught Ave., Willowdale, Ont. 112-2 M2, Canada. Contract Forester, Ministry of Natural Resources, Kapuskasing, Ont.

DALE MICHAEL WOLSTON, 14228 Stonehouse, Livonia, MI 48154. Landscape Designer, R. Mowry & Sons Landscape, Sales Promotion Div., Howell, MI.

DAVID L. WONC, 15449 South Lined Road, Linden, MI 48451.

STEPHEN KENT YANG, 8164 Lancaster Dr., Flint, MI 48504. U.S. Dept. of Interior, Hali Park Service, Isle Royale Hali Park, Houghton, MI.

FRED MARSHALL ZEIFEL, 810 Mine St., Norway, MI 49870.

Alumni News

Michael Henriksen, '64, is president of a new wood utilization company which began operations this year near Grazying, Mich. Lake Woods Forest Products, Inc., produces dimensional lumber, utility pole cross arms, seawall timber and building studs. He previously operated the Lake States Wood Preserving Co. at Manistee, Mich.

James Verville, '68, was named director of the Forestry Division, South Dakota Department of Game, Fish and Parks in November, 1974. He previously held positions as district forester and area forester with the Forestry Division, which he joined in 1970.
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(the landlady)
for making it so.
MTU Foresters Quiz

1. Freshman Dendrology this year was held
   a. In the Red Pine Plantation
   b. Under a canopy of Toxicodendron radicans
   c. The Hancock Gravel Pit
   d. Tiger Stadium

2. What is a transit?
   a. An instrument to measure angles with.
   b. An instrument to level with.
   c. An instrument that disappears the minute you turn your back.
   d. Some of the above
   e. All of the above

3. If you answered “c” to the above, who took your transit?
   a. Mosquitos with a black fly escort
   b. Lake Portage Monster
   c. R.K.M.
   d. Your partner
   e. Nobody, you forgot it

4. If your transit needs adjustment, who do you ask?
   a. R.K.M.
   b. C.E.H
   c. Hammer
   d. Flippy—Flop the tube and turn the plate 180°
   e. Which ever you think of first

5. What is the true name of the leveling rod?
   a. Paul Bunyan's toothpick
   b. Pole
   c. Javelin
   d. Damn stick

6. Dick's beard is
   a. Beautiful
   b. Ridiculous
   c. Fuller than his head of hair
   d. Invisible in the winter

7. Which of the following looks like nothing else?
   a. Acer saccharinum
   b. Sassafrass albidum
   c. Liriodendron tulipifera
   d. How am I supposed to know? I forgot the Latin names
   e. Ask Blackus Bobus

8. Wood is
   a. Our only renewable natural resource
   b. Something Bernie changes to paper after we flunk the identification test and says “now identify it.”
   c. Not plastic
   d. Wonderful
   e. Expensive