For the past few years, the interest by students in the MTU Forester has been declining; however, this year there was a welcome change. We saw some new faces at our meetings, along with some upper classmen, and everyone was interested in producing the best yearbook they could. Because of that attitude, each Forester staff member shouldered some of the work, and we have all tried to bring you a book that is a good representation of our department.

Throughout the Department there was the usual roster of club activities, and participation in Winter Carnival. The underlying structure of our department is in the midst of change, however, and was marked this past winter by Hammer’s retirement.

Not only is Tech’s own Forestry Department changing, but the Forestry Division of the State of Michigan, Department of Natural Resources (DNR) has also been reorganized. These recent changes are discussed and explained in the feature article, “Changing Our State’s Forest System.”

Finally, I would like to thank the DNR personnel for their generous help in providing us with an article and the accompanying photographs. The entire Forester Staff, and Dr. Crowther, have also worked hard in helping me bring this book together, which would have been impossible otherwise. Thanks are also extended to the many Forestry Department staff members, and students, who volunteered some of their time to contribute articles.

Sandra Green
Editor
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The 1980 Forester Salutes

DR. YUAN-ZONG LAI

The 1980 Forester takes pleasure in extending its Salute to Dr. Yuan-Zong Lai, associate professor of Wood and Fiber Utilization. Dr. Lai, known to his friends as Yuan (pronounced U-En), came to the Department of Forestry in 1975 and resides with his family in Houghton. Deeply interested in research as well as in teaching, he has continued the study of wood components, especially lignin, which he began before coming to Michigan Tech. In this process, he has become one of the nation's foremost scientists in the characteristics and treatment of lignin.

Dr. Lai was born in Hsi-Kou, a small community in southern Taiwan. His father was a farmer and owner of a general store. Yuan attended primary school in his home town, then high school in the city of Cha-yi, a 45-minute train ride from his home.

After graduating from high school, he enrolled at the National Taiwan University, in Taipei. In 1963 he received his B.S. degree in forestry, graduating as the top student in his class. Following a year of service as a second lieutenant in the army, he traveled to the United States and began graduate study at the University of Washington, Seattle. He received the M.S. degree in wood chemistry in 1966, then continued his studies and received the M.S. degree in organic chemistry in 1967, and the Ph.D. degree in wood chemistry in 1968.

In December, 1968, Yuan married Grace Wang in Seattle. Also a native of Taiwan, she is a graduate of Soochow University. Mrs. Lai received the M.S. degree in library science from the University of Washington in 1970.

Yuan remained at the University of Washington until his wife had completed her graduate study, engaging in postdoctoral work in the chemistry and utilization of marine algae and polysaccharides.

The couple then moved to the University of Montana, Missoula, where Dr. Lai became a research associate in the Department of Chemistry. There, he engaged in the study of cellulosic fire and flame-proofing. Grace took a position as cataloging librarian, with the rank of assistant professor. They remained in Montana until Dr. Lai accepted a position in the Forestry Department at Michigan Tech in 1975. Here, he engages in teaching in the Wood and Fiber Utilization program and continues his research.

The Lais have two sons, David, 10, and Eric, 8. They are enrolled in the elementary school in Houghton, only a few doors from their residence.

The family actively pursues many interests, including skiing. The boys play both the piano and violin, and David is active in several sports. Dr. Lai also plays tennis and enjoys fishing. Mrs. Lai has been active in the Cub Scouts, serving as a den mother, and serves as secretary of the International Neighbors group.

Dr. Lai is a member of the American Chemical Society, Sigma Xi honor society, and the Technical Association of the Pulp and Paper Industry (TAPPI), serving on the wood chemistry committee of that organization.
As an authority on lignin, he has presented papers at scientific meetings in Hawaii and Washington, D.C., during the past year, and authored a chapter of the book, "Lignin."

Currently he is participating in a study of wood production for energy, in association with other Forestry Department faculty members.

In addition to his research, Dr. Lai handles a major area of instruction in the Wood and Fiber Utilization curriculum, and especially enjoys his participation as a teacher in the University's Summer Youth and Women in Engineering programs.

Combining these many talents with a pleasant and friendly personality, Dr. Lai is a valued member of the Forestry Department faculty and a major contributor to its excellent instructional program in Wood and Fiber Utilization. In recognition of these qualities, Dr. Lai receives our 1980 Forester Salute.

The family gets together.

Graduation from Taiwan University.

David and Eric enjoy their first fall in Houghton.
As must inevitably happen with any institution, an era of a sort is ending at Michigan Tech. with the retirement of Profs. Noblet, Johnson, and Steinhilb, and the impending retirement of Professor Hesterberg, virtually all of the people who were associated with the birth and early growth of the Forestry Department will have terminated professional association with Michigan Tech. Soon all faculty and staff will be of a younger generation. No one will look back, however. As I once wrote in an earlier Forester article, the past is only prelude to a brighter future.

One evidence of that is the growing pains the school is experiencing. In order to accommodate expansion of graduate instruction and research in the Forestry Department and the expanded research of the Institute of Wood Research, the University allocated a newly purchased house as quarters for the Department's Land Surveying program. Besides giving the program better identity and visibility, the new facility provides more than double the space formerly available to it in the Forestry-I.W.R. Building.

Perhaps in this year's report, it would be of special interest to note the growth of research in the School of Forestry and Wood Products. The University's Annual Report of Research for the year ended June 30, 1979, presents the following totals for the Ford Forestry Center, the Institute of Wood Research, and the Department of Forestry (in thousands of dollars): 1975 — $744.2; 1976 — $835.2; 1977 — $1,053.1; 1978 — $1,372.8; 1979 — $1,971.2. The projections for fiscal 1980 indicate that the total research activity should exceed two million dollars. Of significance is that nonfederal funds support the bulk of this research. Of special note is that sponsored research in the Department of Forestry during that period increased from 68.9 thousand dollars to 347.4 thousand. None of the above figures include the in-kind contribution of industrial cooperators.

Classification of forest soils under PL 268 (1977), the Accelerated Soil Survey Act, is proceeding satisfactorily. By the end of the winter all soil-site plots will have been reviewed, and those which fit no existing series will be considered for new designation. Completion of the Forest Soils Laboratory at the Ford Forestry Center will materially expedite work on this project. The lab, which is a research unit designed for quick turn-around time for the same kinds of soil analysis which the Lincoln, Nebraska, National Soil Conservation Service Lab also can perform, has materially aided forest soils determinations for the accelerated soil survey.

A new avenue of research has been recommended by CROFS (Cooperative Research on Forest Soils). Dr. Coffman's work on soil-site-low cover has shown such promise that Champion Papers has lured him away from teaching to pursue that and other research for the company. Now CROFS has directed that intensified research of forest soil erodability be undertaken. Dr. Robert Dohrenwend, Coordinator of CROFS, will coordinate work by interested companies in developing erosion data for important forest soils through use of 'rainulators' which he has developed.

Also related to soils, in a way, is the Michigan Peat Project. Ford Forestry Center personnel are determining the potential of Michigan peat as a potential energy source. This Department of Energy (D.O.E.) project, which is coordinated by MERRA (Michigan Energy and Resource Research Association), involves other cooperators among which ERIM (Environmental Research in Michigan) and the Detroit Edison company are especially prominent. A manageable classification of Michigan's four and one-half million acres of organic deposits has been made possible by adapting the S.C.S. (Soil Conservation Service) organic soil series designations as the basic descriptive units and delineating 16 post-glacial landforms as the basic area units.

In another vein, classification is complete on highway rights-of-way in the Upper Peninsula. Of particular note is the fact that not one objection has been received by the Michigan Department of State Highways and Transportation to the four demonstration cuttings that were established in particularly scenic areas. This is even more remarkable since all cutting was done by commercial jobbers and material sold from all of them produced net income.

As the above shows, in only one facet a new era is beginning for forestry at Michigan tech — one for which the old will be well-remembered as a happy prelude.
Someone once said - "If you can look in a mirror and smile at what you see, then there's hope for you." Well, my 62nd birthday has arrived and I've kept that little saying in mind for several decades as I watch my image tidy up each morning before leaving for school.

For some it is all too easy to get carried away with successes. And the simple test of a look at the mirror with a smile each morning is one way to stay humble — and I like to think I've done a good job at that.

Plans are set for my retirement in December and a person gets a bit mellow when thinking of this decision. Retiring sounds so final — like the end of the line — and I guess it really is the end of my "active" role here. As one ends his role as an educator, it's nice to look back on the trail of responsibilities and, hopefully, accomplishments here at Tech.

Since learning requires vigorous spirit, there is need for a person to develop an aggressive attitude. Then, there is need to enrich one's cultural heritage with the new teachings, the larger truths of life.

Another element — one must be self-respecting to earn the esteem of his fellowmen. Just enough self-respect to attain self-confidence and not enough to allow smugness or egotism.

One final objective is to cultivate innovative leadership by use of knowledge and skills, leavened by the sensitivity of respect for others' personal worth and by social integrity. With education and growing maturity, one may achieve responsive and responsible innovative leadership. But it takes age — seasoning acquired over time — to develop some of these traits.

It is said that "Old men (and women?) are the outcome of youth. What kind are you making of yourself?" Now's the time to adjust the windage on your sights. Each educated young person has a moral obligation. Certain moral values must be adopted to guide our behavior and to encourage each of us — the young and the old — to work toward higher humanistic responsibilities. We must foster an improved society; nurture personal freedom or our educated being becomes a graceless person. What kind of oldster are you making of yourself?
Hammer Retires

With the retirement of Professor Steinhilb, affectionately known as Hammer, MTU's Forestry Department will lose a very unique and colorful component. Having lived in either Painesdale or Trimountain, Michigan, for his entire life, Hammer has been directly involved in the growth of forestry at Michigan Tech from his enrollment as a student in 1936, to the present. To date, he is one of three professors with the most years of service to this department.

Hammer attended Michigan Tech from 1936 to 1940, receiving his B.S. degree in Forestry. He remembers having ten students in his class, including two women, and although most of the core courses in forestry are still the same, he took more math than required and also physics because they seemed interesting. Upon graduation, he was employed as a forester by the Copper Range Mining Co., having worked there during the previous summers.

In 1945, Hammer was asked and accepted the offer to join the staff of MTU's Practical Forestry School. This course was designed to last one year (nine months), and was aimed at giving students not only the basic forestry courses, i.e., tree ID, forest protection, and logging methods, but emphasized field experience—and surveying was done with a staff compass. Lasting about five years, the Practical Forestry School graduated approximately 25 students per year, and some of those continued their education at four-year forestry schools.

In the fall of 1950, Hammer enrolled at Michigan State University to work for an M.S. degree. He graduated in 1951 with his M.S. degree in Forest Management, which emphasized aerial photography interpretation and was supplemented by statistics and botany. He chose MSU because he had become interested in their courses in aerial photo while attending their forestry summer camp in 1938.

Graduation was in June and Hammer immediately returned to teach at Tech, and was just in time for summer camp—something he has been at ever since. Hammer truly enjoys teaching young foresters, and feels it is a rewarding experience. Over the years he has taught almost every course offered by this department, which has broadened his own background at the same time—he had to be on top of the students. Even though he thoroughly enjoys most aspects of teaching, Hammer dislikes assigning grades because he feels it is an attempt to grade a personality. However, he dutifully hands out grades each quarter because he realizes it is the only system we have.

Beginning in January of 1980, Hammer will be employed part-time by the North Central Experiment Station of the USDA Forest Service—adjacent to MTU’s Forestry Building. He will be helping them study logging costs in northern hardwood timber types.

When asked to reflect on the changes in forestry over the years, Hammer mentions its growth from extensive to intensive management, and keeping that in mind, he feels, “The best tools students in forestry can have are common sense and depth in their field.”

—Sandra L. Green
Dr. Eric A. Bourdo, Jr.
Dean, School of Forestry and Wood Products
B.S. Michigan Tech. Univ.
M.S. Univ. of Michigan
Ph.D. Univ. of Michigan

Gerald M. Allan
Instructor
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M.S. Michigan Tech. Univ.

David E. Andersen
Faculty Assistant
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Dr. Gene A. Hesterberg
Head, Dept. of Forestry
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M.S. Univ. of Michigan
Ph.D. Univ. of Michigan

Dr. James P. Armstrong
Assistant Professor
B.S. Pennsylvania State Univ.
M.S. State Univ. of New York, Syracuse
Ph.D. State Univ. of New York, Syracuse
Dr. Lindo J. Bartelli
Adjunct Professor
B.S. Michigan State Univ.
M.S. Michigan State Univ.
Ph.D. Univ. of Illinois

Dennis A. Baril
Forestry Aide
A.A.S. Michigan Tech. Univ.

Johann Bruhn
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B.S. Utah State Univ.
M.S. Univ. of Michigan

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M.S. Univ. of Michigan

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Ph.D. Univ. of Idaho
Dr. Allan P. Drew
*Assistant Professor*
B.S. Illinois Univ.
M.S. Univ. of Arizona
Ph.D. Oregon State Univ.

Dr. Margaret F. Herman
*Instructor*
B.A. Colorado College
M.S. Washington State Univ.
Ph.D. Univ. of Michigan

Dr. C. Richard Crowther
*Professor*
B.S. Iowa State Univ.
M.S. Iowa State Univ.
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Charles E. Hein
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M.S. Michigan Tech. Univ.

Vernon W. Johnson
*Professor*
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M.S. Syracuse Univ.
Dr. Martin F. Jurgensen
Professor
B.S. Syracuse Univ.
M.S. Syracuse Univ.
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M.S. Univ. of Minnesota
Ph.D. Univ. of Washington

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B.S. National Taiwan Univ.
M.S. Univ. of British Columbia
Ph.D. Univ. of British Columbia

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B.S. Michigan Tech. Univ.
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Ph.D. Univ. of Wisconsin

Irvin R. Ziemer
Faculty Assistant
B.S. Michigan Tech. Univ.

Helmuth M. Steinhilb
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M.S. Michigan State Univ.
Student enrollment in the Department of Forestry registered a modest decline in the 1979-80 school year, as 569 students were enrolled. Of these, 465 were forestry undergraduates, 32 were in land surveying, 52 were wood and fiber utilization majors, and 20 were graduate students.

Personnel changes highlighted the year. Most notable was the retirement of Prof. H. M. (Hammer) Steinhilb, who retired in December, 1979, after nearly 35 years of teaching at Michigan Tech. Hammer joined the faculty in 1945 and took charge of the newly formed Practical Woods School at PorI, Mich., which continued to operate until 1949. He then joined the Forestry Department where he continued to teach until his retirement.

Hammer's departure leaves a gap that will be difficult, if not impossible, to fill. However, he is only semi-retired, as he continues in research work with the U.S. Forest Service laboratory, located adjoining the Forestry Building.

Dr. Michael S. Coffman resigned in November, 1979. He accepted a position with Champion International, Inc., and is stationed at Iron Mountain, Mich. Dr. Coffman is in charge of the company's research in the North Central region of the nation. He had been a member of the faculty since 1970.

Dr. Robert Ginn, assistant professor, who joined the Wood and Fiber Utilization faculty in 1976, has transferred to the Department of Chemistry and Chemical Engineering. He still comes around frequently to pay us visits, however.

Dr. John Kotar joined the faculty at the beginning of the academic year to teach courses in silviculture and regional forest ecology. Dr. Kotar holds a B.S. degree in Biology and Conservation from the University of Wisconsin at Stevens Point, the M.S. degree in Forestry from the University of Minnesota, and the Ph.D. degree in Forest Ecology from the University of Washington. He has conducted research in alpine ecology in the Pacific Northwest, and in Douglas-fir and red pine silviculture. From 1972 to 1979 he held a faculty position in the Biology Department of the University of Minnesota at Duluth.

Dr. Gene Hesterberg, Head of the Department since 1962, announced his intention to retire at the end of December, 1980. A search committee has been appointed to identify and recommend a replacement for Dr. Hesterberg next year.

Dr. Hesterberg established a new endowed scholarship for forestry students at Michigan Tech through a major gift to the University. It will be known as the Gene and Margaret Hesterberg Forestry Scholarship.

The Department's Land Surveying curriculum has made substantial progress this year. Some of the faculty have moved into the Widmaier House, a newly acquired residence located between the Forestry Building and lower campus. A Kelsh plotter for use in photogrammetric surveying was donated to the Department by the Michigan Department of State Highways.

Prof. Charles Hein and Gerald Allan attended a seminar on applied geodesy at George Washington University, Washington, D.C., in January.
Dr. Yuan Lai continues his research relating to pulping reactions, and pyrolysis and thermal degradation of cellulosic materials. In September, 1979, he presented a paper, “Behavior of Polysaccharides in High concentration of Alkali”, at a national meeting of the American Chemical Society in Washington, D.C. He also teaches in Michigan Tech’s Summer Youth and Women in Engineering programs.

Dr. Roswell Miller is a consultant to the National Park Service in fire management planning for the Voyageur National Park in Minnesota.

Dr. Allan Drew completed a study of shoot/root dynamics of Douglas-fir seedlings, and continues to work with Dr. Johann Bruhn on red pine micorrhizae and seedling growth.

Dr. Richard Crowther completed preparation of a slide-talk to be maintained by the Upper Peninsula Chapter, Society of American Foresters, for loan to schools and other groups. Preparation of the set, explaining forestry in Michigan’s Upper Peninsula, was begun several years ago by a committee headed by Prof. Bernard Carr of Michigan Tech’s Forestry Technician program faculty.

Dr. Martin Jurgensen is recipient of a Senior Research Fellowship for a year of study in New Zealand, beginning in September, 1980. He has presented papers on soils and nutrient cycling at three scientific meetings, and has had 12 papers published in scientific journals during the past year.

Prof. Robert Sajdak has continued to head a project designed to test the feasibility of growing and managing fast-growing forest stands for energy production. Other faculty members engaged in this project are Dr. Jurgensen, Donald Schwandt, Dr. Yuan Lai, and Glenn Mroz.

Margaret Herman completed work for her Ph.D. degree last spring. Her dissertation was on Spruce Grouse Habitat in Western Montana, and she received her degree from the University of Montana, Missoula. She also attended the North American Wild Life Conference at Miami Beach, Florida, in March.

Donald Schwandt also received his Ph.D. degree from Michigan State University last spring. His dissertation title is “Stand and Individual Tree Volume and Basal Area Growth as a Function of Time and Soil.”

Johann Bruhn completed the requirements for the Ph.D. degree in plant pathology from the University of California at Berkeley, last spring. He attended an international symposium, “Effects of Air Pollutants on Mediterranean and Temperate Forest Ecosystems,” at the University of California, Riverside, in June. There, he presented a paper on the effects of air pollution on ponderosa and Jeffrey pine. He also attended the 1979 Western International Forest Disease Work Conference in Salem, Oregon, last fall.

Hammer enjoys his retirement dinner.
CLASS OF 1980 — Major in Forestry

Dorothy Bader
Hydrology
Petoskey, MI

Jeffrey R. Baldwin
Urban Forestry
Wilmette, IL

Roger Bays
Recreation Resource Management
Battle Creek, MI

Sally Benson
Forest Management
Highland Park, IL

Robert Biesbrock
Urban Forestry
Wayland, MI

Patrice A. Boerman
Soils
Williamston, MI

Amy Bristol
Forest Management
Cadillac, MI

Carleton E. Britt
Forest Management
Ann Arbor, MI

Germaine M. Bucholtz
Biometrics
Lima, OH
William P. Carlin  
Soils  
West Chester, PA

Barbara A. Clemens  
Wildlife Ecology  
Hancock, MI

Mark F. Cottrell  
Soils  
Oscoda, MI

Patricia A. Crossley  
Hydrology  
Traverse City, MI

Mary H. C. Dagle  
Forest Management  
Indian River, MI

Jeffrey D. Dauzy  
Recreation Resource Management  
Munising, MI

Douglas W. Davis  
Ecology  
Farmington Hills, MI

Laura DeWald  
Genetics  
Ann Arbor, MI

Sandra J. Easler  
Forest Management  
Cadillac, MI
Kym Ganz
Forest Management
Hammond, IN

Darlene M. Garrett
Conservation
Woodstock, IL

J. Greg Gilbertsen
Soils
Upper Sandusky, OH

Sandra L. Green
Technical Writing
Battle Creek, MI

David A. Harju
Forest Management
Cadillac, MI

Philis Heldstab
Urban Forestry
Houghton, MI

Daryl B. Hesselink
Forest Management
Cadillac, MI

Roger Horton
Conservation
West Unity, OH

Sharon R. Hoerauf
Recreation Resource Management
Birmingham, MI
Larry R. Hull  
Forest Management  
St. Clair Shores, MI

Joseph D. Jacobsen  
Forest Management  
Humboldt, IA

Mary S. Jane  
Recreation Resource Management  
Buchanan, MI

Barbara Johnston  
Hydrology  
Houghton, MI

Joan E. Katz  
Pathology  
St. Joseph, MI

Susan Lacker  
Conservation  
Saginaw, MI

John E. Landoski  
Hydrology  
Belleville, MI

Robert J. Laverne  
Forest Management  
Detroit, MI

Timothy F. Le Vigne  
Forest Management  
Drayton Plains, MI
Mary B. Llewellyn  
Recreation Resource Management  
Lake Forest, IL

Patricia J. Martin  
Biometrics  
Pontiac, MI

Kola Mato  
Genetics  
Redford, MI

Gail A. Spencer Meridith  
Urban Forestry  
Sheperd, MI

Rick A. Mix  
Ecology  
Clayton, OH

Esther Naegeli  
Recreation Resource Management  
Rochester, MI

David Charles Nelson  
Forest Management  
Ypsilanti, MI

Steven Niehauss  
Soils  
Farmington, MI

Jeffrey Alan Noble  
Industrial Forestry  
Melvindale, MI
Morasky Wins Scholarship

Bernard E. Morasky, an Alpena junior majoring in forest business at Michigan Technological University, has received a $500 scholarship from the Northeastern Loggers’ Association. The scholarship represents the second place prize in the association’s fifth annual scholarship contest for four-year forestry programs in the northern region of the United States.

The award to Morasky was based on his scholarship, work experience, extra-curricular activities and an essay submitted on the topic “The Role of the Private, Non-Industrial Woodland Owner in Future Wood Supply.”

This is the third year in a row that Michigan Tech students have won one of the association’s four awards. Two of the awards are made to two-year programs and two are made to four-year programs. So far, MTU students have won two first place prizes and one second place prize. This year’s award makes Michigan Tech forestry students the recipients of half of the awards presented to four-year programs in the past two years.

The Northeastern Loggers’ Association is composed of members from all facets of the forest industries in the 25 states of the northeastern United States. The competition is open to students from 21 four-year forestry schools and 18 two-year forest technician schools.

Patricia A. Onacki
Kendal J. Phillips
Ann M. Pullen
Sally D. Renn
Ricky D. Selk
Richard R. Resovsky
Bradley D. Schulte
Douglas A. Shown
Brian G. Sichel
John M. Simone, Jr.
Brian C. Smith
Kent E. Snyder
Robert G. Wagner
Valerie A. Weber
Kenneth B. Wicklund
Timothy D. Williams

Bernard Morasky holds his scholarship check after presentation by Dr. Roswell Miller.
Land Surveying Major

Steven C. Hein
Calumet, MI

Daniel W. Webb
Holt, MI

Graduates — Not Pictured

Terry J. La Fountain
John M. Skoetlas

WOOD AND FIBER UTILIZATION MAJOR

Graduates — Not Pictured

Robert L. Adams
Wood Science and Technology
Powell, Ohio

Kenneth A. Bolster
Mark B. Brandon
Thomas A. De Vilbiss
Mark S. Fanfalone
Howard S. Griggs
Richard M. Karlowski
Edwin D. Kraai, Jr.
Paul Manderfield
Kathy L. Manninen
Keith McMullan
Randall K. Melvin
Patrick E. Murphy
Ronald S. Schowengerd
Emmanuel Z. Usen
Joseph T. Walsh
MASTER OF SCIENCE IN FORESTRY

David E. Andersen
Forest Entomology
Laurium, MI

Laura Maguire Curry
Silviculture
Houghton, MI

Terry J. BeBlaay
Wildlife Management
Grand Rapids, Michigan

Kenneth W. Farrish
Forest Entomology
Detroit, MI

Steven Thomas Karpiak, Jr.
Forest History Interpretation
Philadelphia, PA

Master of Science — Not Pictured

Margaret Rowen Gale
John H. Barclay
Cynthia Louise Robertson Gardner
Kent L. Christopher
David Charles Hamlin
THE FOREST TECHNICIANS OF 1980

Freshman Class

Front row, left to right: Steve Henricks, Chuck Burr, Andy McNichols, Scott Edwards, Tami Erskine, Art Strom, Dave Breedlove, Bridget Bourdeau; Back row: Roger Skow, Eric Forsberg, Stanly Padyjasek, Sue Bennett.

Sophomore Class

Front row, left to right: Ric Plate, Michael Kocker, Jill Bennett, Becky Arman, Cheryl Stelshott, Mary Somers, Cathy Bauerkle; Second row: Geoff Hardies, Tim Roth, Jim LaChapell, Gary Mullen, Steve Ryder, Randy Kerr; Back row: Andrew Creedon, Kenneth Schmit, Bob Tykka, Robert Sommer, Roger Perreault, Fred Willemstein, Jeff Davis.
Changes in Michigan’s State Forest System

by James R. MacGregor

Forest resource management and protection have changed significantly in the past five years. Increasing use conflicts, budget reductions, increasing operational costs, and the need for regional economic development require a new approach to the management of Michigan’s state forest system. By incorporating new ideas and concepts into the resource and personnel aspects of forest management, programs remain viable and responsive to public interests and needs. Recent adjustments within the state’s Forest Management Division are a response to specific impacts in the interest of more efficient and effective programs.

Program Impacts

Though it is difficult to weigh the importance of each interest and new management practice that have led to change, several impacts are significant.

Michigan forests provide opportunity for an increasing number of diverse interests which often conflict. Forest managers lease land for gravel and oil development, they develop wildlife habitat, build interpretive sites, trails and campgrounds for a variety of uses, and they grow timber. As our population and demand for forest resources increase, how we use our resources becomes extremely important. We must identify the best use for each acre.

A predictable increase in the demand for forest products is now becoming apparent, along with the industrial recognition of the significant value to which Michigan forests have grown. It would appear that regional opportunities for an improved industrial base, in part based on forest products, will be realized in the foreseeable future.

The public’s expressed interest and criticism for environmental quality is both constructive and encouraging. Forest aesthetics are receiving greater recognition as forest management plans are being developed and timber sales finalized. An interested, involved public is a recognized asset.

Declining tax revenues, both state and federal, and increasing operational costs are forcing program reductions and adjustments. The Forest Management recreation program provides a good example: as budget reductions occur the number of trails is reduced to compensate. Too, more forest campgrounds are put on a pay-as-you-use-basis.
Management Response

Three broad objectives may help clarify the changes that have been made to improve the effectiveness of the forest management on Michigan's state forests: (1) to streamline the process of forest management; i.e., make it more efficient and responsive; (2) to reduce the amount of conflicting use of forest land; and (3) to provide an opportunity to openly exchange differing viewpoints; i.e., a forum for arbitration of conflicting interests.

With these objectives in mind (they are interrelated), let's look at four of the changes considered most significant.

As a result of several conferences, the Department of Natural Resources and forest managers took action which:

- Focused on "key values."
- Developed a new Operations Inventory.
- Reduced the number of dedicated state forests from 33 to 6.
- Merged the former Forestry and Forest Fire divisions.

*Key values* are being identified to provide a clearer operations and planning focus for the Department and to reduce the loss of forest values attributed to conflicting use.

Marion Clawson, in his book "Forests for Whom and for What" addresses the inherent conflicts in the *multiple use* approach to forest management and suggests the resolution in his "key values" approach to land management. With key values identified, purposes are more clearly defined, less arbitrary, and management objectives more clearly conceived and directed.

The need for a forest management process that promotes a variety of uses is acknowledged, and multiple use of our state forests remains the primary objective when considering the state forest system as a whole. However, in Michigan the concept has been modified to include key value designations in recognition of the fact that management for all forest values on a relatively small geographic area may be incompatible. As an example, off-road vehicles (ORV) and the preservation of a historic site or natural area are in direct conflict. Intensive timber management also requires designation to protect management investments against other activities that might prevent future harvest.

The compartment, from one to several sections in size, is the key value planning unit. A *Compartment Review* is held in the District for each compartment. The key value is identified and a specific management approach is determined through discussion and consensus by a team of selected representatives of the respec-

*Multi-discipline review.*
tive resource management disciplines; i.e., wildlife, fisheries, and forest managers. Other values, though subordinate, receive consideration to the extent that they support the key value, or at least do not distract from the key value.

The consensus approach, allowing concerned interests an opportunity to resolve use-conflicts, appears to be a very beneficial addition to the planning process.

The key value classification system is currently being developed. The relative natural character of a forest area is a significant factor in separating conflicting forest uses. Intensity of human use and intensity of vegetative manipulation is a measure of naturalness. Key value areas will range from completely natural, such as wild and natural areas, to areas where vegetation is highly manipulated, such as areas managed on a short rotation for fiber and deer habitat. Another intensely used area would be an ORV general use area. The following key value categories will be used with varying degrees of management and use intensity within each:

- **Timber** - sawlogs
- **Timber** - firewood
- **Wildlife** - early successional forest
- **Wildlife** - late successional forest
- **Prairie grouse**
- **Wetland wildlife**
- **Dispersed recreation** - local residential
- **Dispersed recreation** - migratory
- **Developed recreation** - rustic
- **Endangered and threatened species**
- **Wilderness, wild and natural areas**
- **Mixed use**
- **Other** (to provide for special local designation)

Prescriptions developed during the Compartment Review are based on conditions found on-site during the operations inventory. These prescriptions will be reviewed and updated every ten years.

The *Operations Inventory*, developed jointly with the staff and data systems of Michigan Technological University, provides specific species, growth, and treatment information for management planning and operational objectives. The inventory provides data for day-to-day activities on the forest.

*The number of dedicated state forests have been reduced from 33 to 6* for several considered reasons.

The primary reason was to reduce conflicting use. The larger the planning-operational unit the greater the opportunity to identify site alternatives for diverse interests and programs. Larger units have greater variety, allowing a better "fit" — less conflict between site and activity. More conflict is inherent in smaller units which find difficulty accommodating a multiple use.

With fewer primary units, objectives are more uniform. In planning and in administration, too broad a span of control—33 state forests—is cumbersome with the review of 33 separate forest management plans. The six management plans being developed for each of the six state forests are based on the prescriptions developed through the Compartment Reviews guided by common objectives.

This realignment has streamlined the resource/personnel management system as each of the new state forests conforms with the administrative district. Both personnel and program management are clearly the responsibility of the District and Regional Forest Managers. Three new staff positions have been filled in each district to assist the District Forest Manager. Their respective concentrations are Resource Planning, Forest Cultivation, and Cooperative Forestry Assistance.
New methods effect management programs.

Fire can be useful in management, but also occurs unexpectedly.
The former Forestry and Forest Fire divisions have been unified, forging a strong link between protection and technical forestry activities. The personnel from these two former divisions bring together a broad base of experience and expertise. With cross training and additional experience, foresters and forest technicians will strengthen significantly the fire suppression effort. Conversely, Fire Officers and Equipment Operators complement the forest management and forest recreation programs.

Evaluation

Though the changes are recent, several positive statements can already be made.

The Compartment Review process, conducted by multi-disciplinary teams, is a very constructive method of determining the use and treatment on specific land areas. To arrive at consensus is not always easy but the decisions become more accurate as the alternatives proposed by other interests are considered.

Key values, though still being refined, are providing a sharper focus for resource management plans.

The data provided by the computerized Operations Inventory is establishing measurable output and expected activity levels for District and Area Forest Managers. They know in advance which areas, what treatment, and how much will be produced from each compartment in the coming year.

Because of the merger and with the addition of the staff specialist positions, additional career options are open to personnel within the Division. As with all enterprise, it's the ability, skill, and foresight of the people, the right balance of generalists and specialists, and the promotion of competent individuals that "make it happen."

As we enter the 1980's the expectations of the Forest Management Division are high. In spite of budget and cost constraints, greater emphasis will be placed on Michigan's forest resources as the need for products and fiber increases. The Michigan wood industry is expanding rapidly. New companies are appraising Michigan forests, seeking new locations for development. As Michigan strives to broaden its tax and employment base, the forests and forest products will play a significant role.

The eighties will confirm the value of the decisions and changes made in the seventies.

There is no more satisfying or challenging profession than the management and protection of Michigan's forest resource. As employees of the Forest Management Division, we resolve to do our very best to assure the public and industry that a dollar spent on forest management is a dollar invested in the future of Michigan.

Land use alternatives.
Today forestry has become a very "scientific" profession — we are continually learning how to grow the wood supply we need in a shorter time, and with an even better end product than was formerly possible. However, much pioneering work with the existing forests was done in the earliest days of forestry. One man who helped initiate much of the basic work on the forested land of Michigan's Upper Peninsula is Bruce G. Buell.

Bruce is now retired, and living in Chassell, Michigan, but when he started working for the Patten Timber Co. (now incorporated into the American Can Co.) on May 9, 1930, he became the first industrial forester to work in Michigan. While working for Patten he made many contributions as a professional forester, among which was the use of selective logging.

As a boy, Bruce was reared by his father and Aunt Flora, because his mother had died when he was just two and one-half years old. He lived on a farm just outside Ann Arbor, Michigan with his three brothers, until he was graduated from the University of Michigan in 1919.

In the fall of 1915, Bruce enrolled at U. of M. and decided to study forestry. At that time, Filibert Roth, a well-known figure in the early days of American forestry, was teaching at U. of M. so Bruce had the privilege of attending several classes taught by Roth. As a student, Bruce found that Roth's ideas about forestry seemed desirable, and were presented in such a way that they seemed practical. One of the major ideas which Bruce remembers hearing from Roth was the multiple-use concept, although the term "multiple-use" was not widely used at that time.

The United States became involved in World War I during the time Bruce was attending U. of M.; many young men were leaving college to join the armed forces. Although Bruce remained in school, the other five men who had started their forestry education with Bruce in 1915, did leave. As a result, Bruce Buell was the only forestry major to graduate from U. of M. in 1919.

The first employment Bruce found after his graduation was with the U.S. Forest Service, as an Assistant Ranger on Washakie National Forest, in Wyoming. He had a temporary appointment that lasted about one year, ending in September, 1920, and included a transfer to the Arapahoe National Forest in Colorado. Bruce's next job was with Provincial Paper Mills, in Port Arthur, Ontario. He was hired as a scaler, and after working in Canada for about nine months, he returned in June, 1921, to Ann Arbor, to marry his long-time sweetheart.

Following his marriage, Bruce returned to Ontario, and was employed as a cruiser for the Keewatin Lumber Co., of Keewatin, Ontario. At one time after Bruce retired, he began to write about the development of
forestry in which he was involved and commented about the Keewatin job:

... cruising steadily the year round. Exploring would be a better term ... The only means of travel we had was by canoe in the summer and snowshoes and toboggans in the winter ... It was rugged work. I well remember the winter of 1921-22, when a party of 3 of us, (another cruiser, a camp man, and myself) turned in maps and timber estimates covering 1000 square miles in the 3 months of Jan., Feb., and Mar. And during the month of Feb. recorded temperatures . . . down to 55 below . . . Granted the results were rough enough indeed, but a big improvement on the blank sheet of paper which is all we had prior to our work. Cost of this job figured out at 1/4 cent per acre.

Bruce stayed with Keewatin for about three years, until the fall of 1923, when he returned to Ann Arbor and U. of M. to work for his master's degree.

After obtaining his M.S. degree, in the spring of 1925, Bruce found himself involved in various jobs for the next five years. During that time he fell back on the surveying skills he had learned as an undergraduate, and worked for several engineering firms based in Ann Arbor. He also made an attempt to start his own forestry consulting firm, but found business hard to come by. In an attempt to survive, his firm also did surveying, and developed a small business in landscape design and planting.

Just before he went to work for Patten Timber Company, Bruce worked as a surveyor for Holland, Ackerman & Holland, hydro engineering firm in Ann Arbor, and his assignment was to help with the hydro-electric dam at Victoria, Michigan. When Bruce did accept Patten's offer, he said, "I really hated to leave ... as I had, I thought, established a pretty good reputation with them, and they were certainly good people to work for."

Bruce's boss from 1930 to 1940 was Dexter Van Ostrand of the Patten Timber Company, and the two men worked together on many problems during those years. Of Dexter, Bruce once wrote, "Dexter was a good organizer and a hard driver. I often said that he could get people to work harder and for longer than any one I ever met. During the late thirties ... our train crew ... would often ... start switching at 5:30 in the morning. And for the rest of us a 70 hour week was normal. But no one complained ... And Dexter did have the knack of keeping people on their toes, and maintaining interest in the jobs and their accomplishment."

The major contribution which Bruce made to the practice of forestry in the northern forests of the Upper Peninsula was the establishment of a selective logging system. With the approval of Patten's Board of Directors, Bruce first introduced selective logging to the Patten lands near Amasa, and the practice was later extended to a wider area. About the initial attempts Bruce made to start selective logging, he wrote, "Forestry, and the idea of raising repeated crops of trees, was just a fancy frill that only dreamers and half-baked kids out of forestry school believed in. And as I look back, it is quite obvious that no one in his right mind would want to risk good hard cash on such a venture." In 1948, Bruce was transferred to Patten's Green Bay offices, and he remained there until his retirement in 1963.

During the 33 years that Bruce worked for Patten, the company name was changed several times, but as a commemoration to Bruce's basic work and continual dedication, a tract of 93,000 acres of American Can land, managed under the Tree Farm System, was named the Bruce G. Buell Tract.

Although modest about his pioneering accomplishments in forestry, Bruce has fond memories of his forestry days, and his work is an excellent example of the philosophy that, "You can't practice forestry from a swivel chair."

Sandra Green
The Development of New Wood Preservatives

by Alan Preston

The Institute of Wood Research is leading an extensive multi-disciplinary program aimed at the development of a new generation of wood preservatives which will be more environmentally acceptable than those currently in use. The pathway followed in order to develop new wood preservatives from the concept stage to full commercial development is long and tortuous, and many seemingly likely candidates are eliminated during the course of the research.

The initial step in the process is to select potential preservatives for testing, and the basic requirements are that the chemicals must have broad spectrum biocidal activity coupled with relatively low mammalian toxicity. The first biological test involves a rapid decay test using the chemical in a wood water to determine activity against a common brown rot fungus. If marked activity is shown, a series of soil jar tests, each three months long, is carried out to determine the level of chemical required to protect wood blocks against pure cultures of white rot and brown rot fungi. Materials which exhibit acceptable cost effectiveness in these tests are then subject to decay tests in birch blocks in unsterile soil. This very harsh test determines whether a candidate chemical has any potential for use in ground contact, where a vast flora of micro-organisms are found, or whether it is active only against Basidiomycetes species, in which case the material may be useful only in wood being used in above ground situations.

Chemicals which survive the fungal screening process are investigated for activity against termites and wood boring insects. The termite screening test involves treating filter paper with the preservative then studying the behaviour of termites placed in contact with the disks. Chemicals which cause significant mortality or anti-feeding effects are then subjected to a standard termite sandblock test wherein a treated wood block is placed in a jar of moist sand with approximately 2000 termites. The condition of both the termites and the block after thirty days determines the effectiveness rating of the chemical at the various treatment levels used. This particular test is an expensive proposition when one considers that to test just ten chemicals requires approximately 500,000 termites.

Laboratory screening tests for biological control can only be considered to be preliminary, however, and at this point materials which show potential for use in ground contact are used to treat both hardwood and softwood stakes for exposure either in the Fungus Cellar (an accelerated decay facility which few other institutes have) or in field tests in Florida and Panama. These two sites were selected on the basis of their being conducive to both fungal and termite attack on wood installed there.

It must be realized that the IWR's function in the development of preservative systems does not stop with the biological testing, as to meet the stringent requirements of regulating authorities and the American Wood Preservers' Association it has to be shown that various species of wood can be treated adequately with the chemical in question. This stage of the development demands very extensive development of treating schedules and many chemical analyses to ensure that all parts of the wood requiring treatment have received an adequate level of the preservative.

The key to the development of a new preservative is the coordination of the various disciplines involved, and here at the IWR our program covers chemistry, entomology, mycology, wood anatomy, engineering, statistics, and computerized literature retrieval. The future outcome of the research is dependent on the utilization of research skills drawn from each of these areas to enable the new preservative to be presented to the industry as a complete package.
Expanding Fiber Supplies with Intensively Cultured Plantations

by James Mattson

Forestry in the United States is approaching a position which agriculture in this country has occupied for many years. The industry must increase the production of wood products to meet an ever increasing consumer demand while simultaneously compensating for the loss of timber producing land to other uses. The demand for forest products has been projected to almost double by the year 2000 while the area of commercial timber land available for production of forest products is projected to decrease as much as five million acres per decade. At current levels of annual growth and utilization of available timber, the balance between supply and demand is projected to become critical in the near future.

One of the promising approaches to increasing the supply of fiber for the pulp and paper industry is “short rotation intensively cultured” (SRIC) forestry. Basically, the concept consists of establishing plantations of genetically superior trees on well prepared sites, fertilizing, and cultivating to maximize early growth; then harvesting whenever the annual growth begins to fall off, usually before the trees are ten years old. Several investigators in various parts of the country have studied the potential of these systems. Initial results have shown that biomass yields can be five to ten times that of conventional timber growing systems on a tons/acre/year basis. In the North Central region, the growth potential of a Populus hybrid (Populus 'Tristis #1) growing on a 4- by 4-foot spacing under intensively cultured conditions has been projected to be about six times that of a natural aspen stand. Some of the other tree species which are felt to be compatible with short rotation systems are cottonwood, sycamore, and red alder.

One year old stump sprouts of Populus 'Tristis #1.
A multidisciplinary team of North Central Forest Experiment Station scientists are studying the concept of growing wood under SRIC forestry systems. The work is headquartered at the Forestry Sciences laboratory in Rhinelander, Wisconsin and includes geneticists, tree physiologists, soil scientists, hydrologists, entomologists, pathologists, economists, engineers, and forest products technologists from various research locations within the North Central Station.

Once greenhouse tests and small plot trials have established the physiological requirements for maximizing the fiber yield from SRIC plantations, the technology must be developed to apply these practices on a commercial basis. This is the role of the forest engineering research project in the short rotation intensive culture research program: to develop equipment and systems which will be needed to economically establish, manage, and harvest SRIC plantations. Engineers from the project are currently looking at equipment concepts for planting and harvesting operations on SRIC plantations. Both of these areas are unique as the problems posed by SRIC systems vary considerably from conventional forestry practices.

Planting conditions on these plantations are much easier than found in normal forestry but for economic viability, production rates of planting must be increased dramatically. The need to plant on very short spacings, typically about one meter by one meter, requires machine production rates approaching that of agricultural equipment. Accurate spacing of plantings is also necessary to insure full utilization of the site at the earliest possible time.

Planting a hybrid poplar plantation.
Two differences between short rotation trees and conventional timber that have significant bearing on the design of harvesting systems are the size of the trees and the spacing between the trees. Growing on one meter by one meter spacings, on rotations of five to ten years, the trees at the time of harvest will probably be less than five inches in diameter and weigh about 100 pounds. This small tree size requires new equipment concepts which can harvest the trees in a continuous fashion such as an agricultural combine which moves through the field and fells all material in its path.

The SRIC concept is still unproven and requires much more development work. However, if the concept can be proven, it may be one of the ways in which an adequate supply of fiber can be insured in the years to come.
The Ford Forestry Center

by Dr. Lindo J. Bartelli

The research of the Ford Forestry Center has expanded to include intensive studies of potential energy sources in biomass production. In addition to projects with the city of Marquette involving the use of wood chips in its power plant, the U.S. Department of Energy has awarded the FFC a grant to conduct an inventory of the peat resources in Michigan. This study is funded through the Michigan Energy and Resource Research Association, which is a research development, and demonstration partnership of state government, universities, and industries of Michigan.

The first step, already begun during the summer of 1979, is to conduct a field inventory of the resource. This phase is designed to characterize the energy potential of the various peat soils mapped in published soil surveys. This phase will characterize the BTU's available in each pound (dry weight) of the selected soil series. In addition, depth studies of sample sites will be used to expand known acreage data to volume estimates. This phase will provide a quantitative and qualitative inventory. These field studies will include samples from major peat deposits throughout the state.

The study will begin to provide information on many crucial questions dealing with the peat resource. A major question deals with the energy potential of the 4.5 million acres of peat soils reported to be in Michigan. Such restrictions as depth, acreage, and minimum BTU's per pound will reduce this acreage considerably.

The study included the following phases:

1. Inventory the potential for energy of the 4.5 million acres of peat soils in Michigan.
2. Assess the potential of each kind of bog to store water, trap storm water, provide food and cover for wildlife, and provide fishing potential.
3. Assess the potential of the bog to produce vegetation following partial and complete removal of the organic deposit.
4. Develop a predictive model that can be used to evaluate the potential of each kind of peat soil for alternative uses. The model will incorporate both environmental and socio-economic impacts of each use. The use of peat as a source of energy, the impact of peat mining on the economic environment in depressed areas, the agricultural benefits and the aesthetic values of peat bogs are involved. Additional uncertainties, such as the renewability of peat bogs after mining, the hydrologic importance of peat, and the "blotter effect" of peat bogs in absorbing pesticides and herbicide residues, in addition to other industrial and urban wastes, also will be evaluated.

The study is scheduled for completion within the next five years and will involve many of the FFC research staff, in addition to several graduate research assistants.
The Forestry Club’s Booyaw

A capacity crowd turned out for the annual Forestry Club Booyaw held March 18 at the Trinity Episcopal Church in Houghton. The dinner, prepared by faculty members under the direction of Chief Chef Norm Sloan, did another outstanding job of cooking and serving the meal. The usual question of “What’s in the stew this year?” were answered with, “Well, if you don’t like venison, you’ll love this year’s booyaw.” And apparently everyone was quite satisfied, as there was very little left over.

Dr. Robert Janke of the biology department provided the program by showing slides of Isle Royale and discussing the history of the island’s plant community and its relationship to fire.

When the evening was over, everyone was well-filled with booyaw, salad, rolls, and cake, and only hungry for a relaxing trip to Isle Royale to enjoy its attractions firsthand.
THE 1980 FORESTER STAFF

Front row, left to right: Karl Kriigle, Janice Arden, Mike Moore;
Back row: Dr. Crowther, Heidi Pfosch, Mary Llewellyn, Sandy Green, Jeff Noble. Missing: Tim Trombley, Tom Tauchus, Steve Niehaus, Joan Freeman.

Editor: Sandra Green
Business Manager: Heidi Pfosch
Photo Editors: Tim Trombley and Tom Tauchus
Assistant Editors: Janice Arden, Mary Llewellyn, and Jeff Noble
Photographers: Mike Moore, Steve Niehaus, Karl Kriigle, and Joan Freeman
Advisor: Dr. C. R. Crowther
The 1979-80 school year was a successful one for the M.T.U. Forestry club, thanks to the active participation by a fired-up membership.

Officers for this year were: Jeff Noble, Chief Forester; Todd David, Assistant Chief Forester; Dave Carroll, Treasurer; Joe Hallenbeck, Secretary; Dan Malueg, Camp Committee Chairman. Ros Miller was our Faculty Advisor.

One of the club’s more significant accomplishments this year was an increase in communication and cooperation between the Alberta branch, and main campus branch of the Forestry Club. Alberta’s participation in Camp Day, Conclave, and other events was greatly appreciated.

Some of the other activities and events for the year included a cross-cut sawing demonstration and competition at the Copper Harbor Octoberfest, a very profitable fall pulp cut, and a good showing at the 28th Annual Midwestern Forester’s Conclave.

Our club meetings included presentations regarding Champion International Company, the Soil Conservation Society of America, and a climbing expedition to Alaska’s Mount McKinley.

Winter Carnival was a great success as we joined with Xi Sigma Pi, S.A.F., the Wildlife Society, and F.P.R.S. to compete as “The M.T.U. Foresters.” We placed third in snow statues, third in broomball, and eventually tied up third place, overall, in Class C.

All in all, it’s been a great year, owing to the participation from the club’s members, and I anticipate the same sort of success for the M.T.U. Forestry Club in the future. Only the best!

Jeff Noble
Chief Forester

The officers enjoy refreshments at the conclusion of an exhausting meeting.
When do I quit?

Timberr!

Always ready for more.

Snowshoe softball — without the snowshoes.
The Douglass Houghton Chapter of the American Congress on Surveying and Mapping (ACSM) was formed during the spring quarter of 1979 and was officially recognized by the ACSM on May 25, 1979. The faculty advisor of the chapter is Charles E. Hein.

The purpose of the organization is: to advance the sciences of surveying and mapping, encourage improvement of university and college curriculums for surveying and mapping, and to provide a medium for the expression of common interests and local exchange of ideas and knowledge.

These objectives were accomplished by various speakers who have talked to the group, and by attending conventions such as the Michigan Society of Registered Land Surveyors convention that was held in March at Marquette. Members of the ACSM also receive ACSM NEWS, SURVEYING AND MAPPING, ACSM BULLETIN, and AMERICAN CARTOGRAPHER.

During Winter Carnival the surveyors built a one-nighter snow statue which was located in front of the new Land Surveying office building. The experience proved to be a lot of hard work, but everyone had a good time.

Three speakers gave presentations to the group during the fall quarter. Larry O'Donell, from U.P. Engineering, showed a film on land surveying. Dan Webb and Suzanne Sippel, both students at MTU, gave separate slide presentations on their surveying work experience in Alaska.

The winter quarter began with MTU's Professor Walt Anderson, also a member of the National Council of Engineer Examiners, speaking on the history of registering land surveyors in Michigan. Tim Collins, an instructor of Civil Engineering Technology, talked about computers and programs available to the surveyor. The final speaker of the winter quarter was John Haataja, of U.O.P., who discussed land planning and subdivision.

Our thanks to all members, faculty, and speakers who made the first year of the Douglass Houghton Chapter of the ACSM a success. We hope to see both the chapter and the Land Surveying curriculum expand in the future years.

Terry Lafountain - Pres.
John Matonich - Vice Pres.
John Maloney - Sec./Treas.
Saturday, October 20, 1979 was a long awaited day for a small group of Michigan Tech foresters. This was the day our conclave team would meet with other foresters from the Midwest to compete in sawing, chopping throwing, and spitting events. That Saturday was the 28th Annual Midwestern Forester's Conclave.

Plans to organize this year's team began last spring with meetings of the 1978 team members. Spring training for potential members was also on the drawing board, until it was realized that spring wasn't going to arrive. With those circumstances, all sites were set on early September and the beginning of the fall term.

Instruction in each event and actual practice finally got underway early in September. After many weeks of practice, and two days of try-outs, the Michigan Tech Conclave team was chosen.

With the final decision on team members, spirits ran high at the remaining practices as the team sawed and chopped to the strains of Polka Rendezvous. A highlight which occurred during the final week of practice was the establishment of the imaginary fraternity of Eye Sigmoid Fly, the Michigan Tech Conclave Society.

The drive to Minnesota was relatively uneventful, including a stop at the Hibbing Fire Museum — yes, Ros was driving. Finally, we arrived at Camp Courage, site of the 1979 Conclave, hosted by the University of Minnesota Forestry Club.

Saturday dawned cloudy and chilly, but still warm enough for our team to show off their new Michigan Tech Foresters T-shirts. Throughout the day the MTU team accumulated points by placing in the traverse, tobacco spit, two woman buck, and the special event. The overall team championship for the day eventually came down to the final event, as Minnesota ended the
Conclave — 1979

Missouri dynasty. The University of Illinois and Michigan State flipped a coin to determine which team would take home the bear skin, because neither team accumulated any points during the day. The Ohio State team was more than happy to hand over the skin.

Months of work on the part of the team members had ended in a day filled with tough competition, new friends, and good times. Unfortunately, interest in Conclave is declining here at Tech, even though participation as a member of the team not only provides contact with other foresters, but offers the chance to learn, or improve traditional skills of forestry.

Michigan Tech's 1980 team will be rolling on to Missouri for participation in the 29th Annual Conclave, and to enjoy some warm weather. How about coming to the practice field and seeing what conclave is all about?

1979 Conclave Team
Lou Blume — second place, tobacco spit
Jeff Davis
Tim Frazer
Dar Garrett — third place, two woman bucksaw
Joe Hallenbeck — third place, special event
Geoff Hardies
Mary James
Andy McNichols — third place, special event
Jeff Noble — third place, special event
Mike Powers — third place, special event
Gail Simonds — third place, two woman bucksaw
Bob Thompson
Sue Uttke
Jeff "Bob" Vondel — second place, traverse

Dar "goes for it!"

Match-splitting — an event that requires steady nerves and hair-splitting eyesight.

Jeff really concentrates during the chain throw.
The purpose of FPRS student chapters is to help introduce students to the wood industry and to inform them of new developments. As members, students receive the Forest Products Journal, which is a magazine dedicated to the collection, development, and promotion of advancements in the field of wood.

This year, six students from MTU attended the FPRS Upper Mississippi Valley Section meeting, which was held in LaCrosse, Wisconsin. The theme of the meeting was "Lumber, Dimension, Ties, and Energy From Upper Midwestern Hardwoods: A Look at Market Productions and New Technological Developments." The lectures and discussions were informative, and the students enjoyed conversing with the businessmen.

Activities of the Chapter during the year included sponsoring a party, participation in broomball competition during Winter Carnival, and aiding in the sponsorship of a visiting wood scientist.

Beginning with the spring term election of officers, the MTU Chapter entered its fourth year of existence. Officers for next year will be: Carol Debacker, Chairman; Bill Lange, Vice Chairman; Monica Wojdak, Sec./Treasurer; and Lorenza Mueller, Membership Chairman.

Robert Adams
Chairman
The Michigan Tech Student Chapter of the Society of American Foresters received its official charter on April 29, 1979. The purpose of the S.A.F. is to increase professional awareness by exposure to, and participation in, forestry related activities within and beyond the scope of the academic setting. This is accomplished by reading the Journal of Forestry, other S.A.F. publications, and by attending and participating in S.A.F. activities.

In this first year of its existence, the MTU chapter has worked toward its goals by sending student representatives to S.A.F. group, chapter, regional, and national meetings held in Michigan (L'Anse, Marquette, and Midland), Wisconsin (LaCrosse), and Massachusetts (Boston). Members attending those meetings not only had the chance to widen their horizons through personal contacts with practicing foresters, but also had a good time.

Ralph Grisard
Chairman
This year the members of the Soils Club were especially enthusiastic and productive. Thirteen members traveled to Lansing in November and presented a $250 check to the Michigan Chapter of the S.C.S.A. That check, in addition to $100 donated by the MTU Chapter at the 1979 Summer State Meeting, will be used to help fund the National Convention to be held in Detroit next summer. Michigan is hosting the National Convention for the first time since 1956. The Michigan Tech Chapter's contribution was the third largest pledge by any group and the only one from a student chapter.

In addition, the Michigan Tech Chapter made the first presentation of its' Outstanding Conservation Practices Award to Connor Forest Industries at the Lansing meeting. The award will be presented annually to a company that is wisely managing natural resources.

Several projects are planned for the remainder of the spring term. Our annual tree plant for the Quincy Mining Company is on line for May. This year's effort will make use of a tree planting machine, which should increase our planting significantly. Also planned for May is a soil reaction (pH) testing service for local people interested in improving their garden or lawn soils. We will be recommending lime application rates based on metered pH values. Finally, the Soils Club will be an integral part of the activities during the Forestry Department's 'End of an Era' celebration. This send-off for our retiring or recently retired 'old school' professors should be a fine time.

During the year the Soils Club has had several speakers which gave very interesting presentations. Most of the talent came from within the Forestry Department and the output was grand. Dr. Martin F. Jurgensen discussed his work in Montana on the effects of logging and fire on sheep (sic) mountain slopes in relation to nutrient cycling.

Gary Le Masters discussed his experiences in mapping soils, using the catchy title 'Profile of America.' Glenn Mroz brought up the rear with a presentation explaining his on-going research for the Department of Energy's 'Fuels from Biomass' program.

In addition to these speakers a very informative discussion on proper Civil Service job application procedures was given by our own Dr. Lindo J. Bartelli, and Fred Kekko of the Soil Conservation Service.

Special appreciation is extended to all of our speakers for their time.
Mark pays attention to detail.

Knives are always good cutting tools.

Snow statue workers.
During the 1979-80 school year, the MTU student chapter of the Wildlife Society had 30 student members — its largest ever. Through their membership, those students were able to participate in a wide variety of wildlife-related activities.

Several excellent speakers presented educational and entertaining slide lectures at the monthly meetings. These speakers included: Jack Holland, Ron Gratz, and Rolf Peterson, all from the MTU bio-science department; Jim Ludwiga, a consulting ecologist; EI Harger, a DNR biologist; and Dick Denney, executive director of the Wildlife Society.

A delegation of 10 student members attended the annual North Central Student Wildlife Conclave. Michigan State University was the host of this year’s conclave and it was held at their Kellogg Conference Center near Kalamazoo, Michigan. Students from nine midwestern schools took part in a weekend of seminars, scenery, and socializing. None of our members regretted this educational and fun experience.

The annual Wild-game Smorgasbord was once again a gourmet’s delight. Venison, bear, snowshoe hare, beaver, and other wild game dishes appeared on the buffet table at the Trinity Episcopal Church. The first annual Student Wildlife Award was also presented, and Tim Webb was this year’s recipient.

The arrival of spring brought on a number of activities. The 2nd annual smelt derby produced a number of trophy-sized smelt, and a group of students drove up to Brockway Mountain for an afternoon of hawk watching during the annual migration. The Wildlife Society also lent a helping hand at the “End of an Era” party at the Otter River Camp. The bratwurst was hot and the beer kept flowing as foresters of young and old celebrated the end of an era.

All in all, a good year for the Wildlife Society — learning, working, and having fun.

Timothy Webb, President
Jay Rocker, vice President
Douglas Jones, Secretary/Treasurer
One of the guest speakers at a wildlife meeting.

Members of the Wildlife Society.
The Alpha Eta Chapter of Xi Sigma Pi is now in its eleventh year of existence at Michigan Tech. The objectives of this society are: to maintain a high standard of scholarship in forest resources management education, to work for the improvement of the forest resources management profession, and to promote a fraternal spirit among those engaged in activities related to forest resources.

In the past, high grades were the determining factor for membership, however, high grades do not always make a quality member. At the beginning of this school year, our officers and faculty advisor set a goal to place greater emphasis on increasing member quality. A major change undertaken this year in order to achieve this goal was the use of a different initiation ceremony format. Current members unanimously agreed that this change be made permanent, as it permitted better insight of the personalities and characters of the initiates.

The Xi Sigma Pi coffee and doughnut sale, now in its second year, has met with great success. Both students and faculty start out their day on the right foot. The big fund raising activities which help us to sponsor the annual Xi Sigma Pi spring symposium are spring and fall pulp cuts. This year’s turnout was quite large for both pulp cuts, which indicates that the Alpha Eta Chapter is becoming more active.

I sincerely hope that future members of this chapter will carry on with increasing the quality and efficiency of the society.

Congratulations to our officers, faculty advisor, and all the other members of the Alpha Eta Chapter for making this year the success it was.

Matthew C. Phillips
President

Fall initiates, front row, left to right: Laura DeWald, Sharon DeSchutter, Douglas Davis, William Carlin; Second row: Pat O'Brien, Kevan Buck, Hal Liechty, Larry Hull, Janette Ridley; Third row: Randall Hayman, Phyllis Heldstab, Patricia Ellis; Fourth row: Todd Davis, Ralph Gries, Craig Gooding, Eric Jensen.

Fall initiates, front row, left to right: Mark Meyer, John Cassidy; Second: George Shabel, Thomas Potter, Thomas Darling, Rory Fuller.

Front row, left to right: Ann Strickler, Laura Damschroder, Mary Jane, Shelley Herring; back row: Bruce Bugbee, Robert Cain, Daniel Mills, Thomas Schreiner.

Xi Sigma Pi Active Chapter, 1979-80.
XI SIGMA PI SYMPOSIUM

This year's annual spring symposium, sponsored by the Alpha Eta chapter of Xi Sigma Pi, Forestry Honor Society, was held on Thursday, April 3. The theme this year, contributed by Robert J. LaVerne and Allan P. Drew, was "Wood: An Alternative to Fossil Fuels."

Recently, people in most industrialized societies have begun to recognize the increasing scarcity and distribution problems associated with fossil fuels. This has triggered interest in various alternatives. Wood, a renewable resource, is a prime consideration, consisting of solar energy stored during the process of photosynthesis.

The first speaker, with introductory remarks, was Dr. Eric Bourdo, dean, School of Forestry and Wood Products. He stated that we have the potential to use much more wood than we do. In response to widespread concern over pollution, he pointed out that, when properly burned, wood has a lower ash content than coal.

Following Dr. Bourdo was Mr. Gary Willis, a research forester at Ford Forestry Center. His topic was "Wood Available as Fuel from Hardwood Stands." He showed that the U.P. hardwood stands have the potential to heat 500,000 homes, but that there are still some problems to be worked out.

The next speaker, Mr. Robert Sajdak, assistant professor of forestry at Michigan Tech, spoke on the subject "Intensive Plantation Culture for Fiber/Energy." He discussed the advantages and disadvantages of intensive culture compared to traditional. The main differences are a closer spacing, lower rotation age, and greater use of fertilizer and irrigation. The advantages include higher yield per unit of land area, increased mechanical efficiency, and earlier cost return. Disadvantages were higher initial cost, site limitations, and increased insect and disease problems related to monoculture.

Following the luncheon, Mr. Jerry Nesbitt, formerly president and general manager at Midwest Region Woodex, gave the "Advantages of Pelletizing Wood Fuel." He said that the advantages of burning pellets depend on the particular circumstances of a company. The main advantage in most cases is the ease of storage and handling.

The second speaker of the afternoon was Mr. E. Larry Zernach, director of Wood Procurement at Owens-Illinois Forest Products Division. He gave "An Example of Industrial Use of Wood as Fuel." His company, a packaging business, has an energy demand of 6.5 trillion btu's/year, 35 percent of which is met by wood residues.

The final speaker was Mr. Allen Turner from the Energy Office of the state of Vermont. He advocated positive action regarding energy needs, particularly in the potential of wood. He pointed out several problems to overcome, including supply, environmental impacts, wood allocation, and economics, but feels that wood is worth the effort and will pay off.

Joan Katz

Gary Willis gives his presentation.

The informal reception.
The Experience of Summer Camp
by Karl Kriigel

Most people hear of summer camp on their first visit to MTU. From then on they hear many more bits and pieces about the “great times,” but it suddenly begins to come true when summer camp is scheduled for two-thirds of one summer.

About half of the first day and the remainder of the first week is spent at “Cull Mill,” where people are mistakenly scaled as logs and grading includes more ground than trees. By Friday you’ve become an “expert scaler,” but that ability had to be proven while dodging Pettybone loaders and logging trucks.

After learning what trees look like as mud covered logs in the mill yard, the “budding” forester finally gets to see them in their “true form.” For some reason, it is felt that the best place to become introduced to this new skill is at “Mosquito Haven,” in the middle of “Swamp Hollow.”

The skill being taught is cruising, but is literally practiced 99 percent of the time to escape being a hearty snack for 2,000 U.P. Iguano giganteous mosquitos. After many unsuccessful attempts to fight the mosquitos, the best solution found requires an unhealthy coat of “Raid,” one-half a bottle of Cutters lotion, and only showering on Friday nights. Regardless of all precautions, the above solution is only effective for about ten minutes, when a reapplication of at least Cutters becomes necessary.

After several hours of disagreements with your partner and constantly slapping mosquitos, it begins to rain. Blurred notes are impossible to read, but you must finish the exercise before returning to the bus. Once seated on the bus, Irv says, “Common sense should have told you to come in when it started pouring.”

After several weeks of “training,” the final field problem is the only assignment to be finished. Each crew is assigned one hundred and twenty acres of primeval forest in the heart of the “Toivola Wilderness.” As the exact locations are assigned, one crew cries in anguish upon discovering they have the quicksand area, and another is relieved when they are awarded the ankle-twisting rain forest instead of the cypress swamps.

To give all crews an equal start, “Daytona Dave” drives a bus of eager students to the secret location. The place is not particularly “hidden,” but everyone must endure an hour of “ceiling banging” and “seat kissing” before getting there. This makes everyone hastily realize why hard hats are required.

Upon arriving, the crews grudgingly stumble out of the bus and try to assume the role of true foresters: mud-dried boots, blue stained pants, K-Mart fishing — “cruising” — vest, and shiny plastic hardhat. His backpack holds the remaining necessities, including a trusty Silva compass, an empty bottle of “Cutters,” a leaky canteen, and the remains of a lunch at the bottom.
— two deformed peanut butter and jelly sandwiches, and a bruised apple surrounded by cookie crumbs. So, being "well-equipped," the crew members bravely start out with a guiding compass in one hand and "brush chopping" Biltmore stick in the other.

Not even two chains in, the giant Tri-Mountain mosquitoes, species Iguano bughous, penetrate the well-nurtured layer of cutters lotion. A futile attempt to survive is made with a quick reapplication of Cutters before continuing.

Shortly afterwards, a small field swamp is encountered. One crew partner plunges in to check the depth, but doesn't record the submerged log he discovers because they haven't been instructed about "water logging."

The crew goes around the swamp and has completed several sample points before discovering a rushing river. After flipping a coin, one crew partner starts in to test the current, and is fine until he is hit by floating debris — a three-log, 32" yellow birch. This takes him over the falls and he is found a short time later — a few tallies downstream and wrapped around the next grade tree.

The remainder of the afternoon goes well, except for a huge cloud of black flies directly over one of the points. The crew records that point hastily before their maximum daily donation of blood is exceeded.

Field work is finished in the next two days, and luckily the only other major incident is when unstable soil is suspected and must be confirmed. Halfway across the area, the "lucky" crew member disappears into the oozing black sludge, and is rescued from a complete mud bath by a branch extended by his partner — which barely holds together because of the infiltration of Fomes ignarius.

With the field work done, two days and three nights are sacrificed to complete the calculations, map work, and written report. When the problem is finally turned in, the student has earned two hours of sleep before studying for the final exam.

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