

Botany and Plant Pathology Department. Records.
A Brief History of the Department of Botany and Plant Pathology at msu
by Irving W. Knobloch, 1989

FOLDER 20
BOX 4240
COLLECTION UA 16-21

Q
U
7
2

History of Botany
and Plant Pathology
- I. W. Knobloch
1989

LUA 51313

**A BRIEF HISTORY OF THE
DEPARTMENT OF BOTANY AND PLANT PATHOLOGY
AT
MICHIGAN STATE UNIVERSITY
BY
IRVING W. KNOBLOCH, PH.D.
PROFESSOR EMERITUS
WITH THE COOPERATION OF
DRS. WILLIAM DREW, AXEL ANDERSEN,
JOHN BEAMAN AND GEORGE PARMELEE
1989**

TABLE OF CONTENTS

- I. The Early Years**
- II. Chairmen of the Department**
- III. Phytopathology**
- IV. Mycology**
- V. Anatomy, Morphology, Cytology and Molecular Biology**
- VI. Taxonomy**
- VII. Algology**
- VIII. Ecology**
- IX. Paleobotany**
- X. Physiology**
- XI. Weed Control**
- XII. Department Activities**
- XIII. Student Awards**
- XIV. Facilities**
- XV. Prominent Alumni**
- XVI. Reflections**
- XVII. Other Beginnings**
- XVIII. Roster of Faculty Members 1859-1988**
- XIX. Staff Roster**
- XX. References Consulted**
- XXI. Appendices**

THE EARLY YEARS

The story of Michigan State College, now University, its departments, and faculty, is a most interesting and complicated saga. The first catalogue, in 1857, was written in longhand and it gave, among other things, the names of the students, their home town and the appropriate county. The names of the faculty members are also listed. Later on, the catalogues were printed. Thousands of pages of records detailing the founding of the college up to the present day are to be found in the archives of the institution and a number of books have also appeared. Some of these records and books are listed in the back of this slender volume.

Michigan was admitted to the Union in 1837. In 1849 a State Agricultural Society was formed which petitioned the legislature to authorize the formation of a college here to meet the needs of the largely-rural population. John Clough Holmes was the energetic secretary of the society and he finally persuaded the state and Governor Bingham to establish, on February 12, 1855, the "Agricultural College of the State of Michigan." Previously, the federal Swamplands Act of 1850 had allocated funds to each state to establish state schools of agriculture. Accordingly, the State Board of Education selected about 677 acres of almost virgin forest in this area interspersed with large areas of swampland. Some considered this site unhealthy; malaria was common and, in 1859, all the students and one of the Professors came down with this then-poorly-understood affliction. The University of Michigan made a valiant effort to have the college transferred to Ann Arbor. Financial woes in the early days were always a threat to the development of the fledgling institution. Fortunately, in 1862, President A.

Lincoln signed the Morrill Act. Thousands of acres of federal land were donated to the college and the monies derived from the sale of this land enabled the college to survive.

The draining of the swamps and the clearing of the land on the original acreage proved to be a herculean task indeed especially since tractors, chain saws and other labor-saving tools were not in existence. Enough of the land was cleared so that three poorly-constructed buildings could be erected; a dormitory named "Saint's Rest", a classroom called College Hall and a barn.

According to the 1857 catalogue, 73 students were examined. This is the figure given by Beal (1915) but Kuhn (1955) and Blair and Kuhn (1955) have slightly lower figures. Possibly some who had been examined, did not choose to stay. From this humble beginning, the college, now university, regularly has about 40,000 students on its roll each year.

The story of student life in the early years could fill a volume by itself. From 1881 to 1882, room charges were \$1.25 per term and meals were \$2.38 per week. Classes were from 8:00 am to 12:00 noon. After lunch, the students labored on the campus, clearing, draining, taking care of the farm animals and working in the vegetable gardens. For this labor they were paid three to eight cents an hour (later they were paid more of course) and this money went a long ways toward paying for their college expenses.

In 1857 the only classes offered were grammar, arithmetic, elementary and advanced algebra, and geography. In 1858, a four year course was drawn up and other subjects appeared such as natural philosophy, rhetoric, history, geometry, trigonometry, surveying, chemistry, drawing, logic, civil engineering,

astronomy, constitutional law and a few others. Botany is mentioned as being offered in the second year and vegetable physiology in the third year.

The 1857 college catalogue lists the first faculty as follows:

Joseph R. Williams, President and Director of Farms

Calvin Tracy, M.A., Professor of Mathematics

Lewis R. Fisk, M.A., Professor of Chemistry

Robert D. Weeks, Professor of English Literature, Farm Economy and
Secretary

John C. Holmes, Professor of Horticulture and Treasurer

Enoch Banker, Assistant in Chemistry

James M. Shearer, Steward

This is not the place to list all the botany faculty changes that occurred over the years, but a list is supplied at the end of the book. The first person named to teach botany was Henry Goadby, M.D. in 1859. He had been approved in 1857 but funds were lacking at that time. His title was Professor of Entomology and Physiology, he came from the Royal College of Surgeons in London and was the author of "A Textbook of Vegetable and Animal Physiology." He served only one school year due to poor health and his duties were taken over for a time by the President at that time, T. Abbot (Kuhn 1955, p. 58).

The 1860 catalogue includes botany in the curriculum and lists George Thurber, M.D. as Professor of Botany and Vegetable Physiology. This gentleman was a nationally-known figure for his work on the United States-Mexican

Boundary Survey of 1850. Thurber made a good impression on students but left sometime in 1863 to seek a more wholesome financial climate. "I am starving here," he is reported to have said. Later he became editor of the "American Agriculturist." In the 1861 and 1862 catalogues, Thurber's courses were structural, physiological, and systematic botany plus instruction in geographic distribution and the principles of horticulture with field practice.

In the 1863 to 1869 catalogues, the botanist was Albert Nelson Prentiss who had entered MAC in 1858, studied botany under Goadby and Thurber and graduated in 1861 with a B.S. degree in a class of seven, the first graduating class from the College. Prentiss was an instructor from 1863 to 1864 when he received the M.A. degree here. Sometime in 1869, he was called to teach at Cornell University but he was listed as the teacher of botany with his home base at Cornell. He "turned out" such famous botanists as Charles Bessey, C.W. Garfield and W.W. Tracy.

The growth of Michigan State University from an agricultural college in 1855 was accompanied by several name changes:

1855 - Agricultural College of the State of Michigan

1861 - State Agricultural College

1909 - Michigan Agricultural College

1925 - Michigan State College of Agriculture and Applied Science

1955 - Michigan State University of Agriculture and Applied Science

1964 - Michigan State University (established by the state constitution)

Chairmen of the Department of Botany and Plant Pathology

In the very early days, the term "Department" was not used because there was only one person teaching a particular field and that person taught subjects in more than one area. For instance, horticultural interests were served by whomever was teaching botanical subjects. The "Horticulture Department" of the early days was equivalent to what is now termed our buildings and grounds set-up. In President Abbot's 1881-1882 Annual Report we read that a Department of Horticulture is to commence on January 1, 1883. James Satterlee, an 1869 graduate, was to be in charge but he served only until October 9, 1884, resigning to take a position with the Michigan Department of Health and later serving as treasurer of the State Horticultural Society.

In 1885, Liberty Hyde Bailey, Jr. (class of 1882) became the head of horticulture and he remained in that position until 1888 whereupon he left for Cornell University. Since he was an illustrious graduate, more detail will be found on his life in a section called "Prominent Alumni."

Forest interests, also taught by the college botanist, were amalgamated into a separate department in 1902.

Turning back now to the topic under discussion we can list the men who have headed up our department:

William J. Beal	1870-1910	Edward J. Klos	1973-1974 (Acting)
Ernst A. Bessey	1910-1945	Fred H. Tschirley	1974-1979
F. Lyle Wynd	1945-1948	Edward J. Klos	1979-1989
William B. Drew	1948-1973		

In 1870, William J. Beal was placed upon the faculty as a lecturer in botany and he remained here for 40 years. In time he became a legend. An authentic account of his life can be found in his own book (1915) as well as in his 1910 report to the State. He was born in Adrian, Michigan on the 11th of March 1833 and he died in Amherst, Massachusetts on the 12th of May 1924. He now lies next to his wife Hannah in Mount Hope Cemetery, Lansing, Michigan.

Some of the highlights in the career of this famous and remarkable man follow: he was a professor and lecturer in several schools prior to coming here; he had an S.B. degree from Harvard University and an Honorary Doctorate from the University of Michigan; first president of the Michigan Academy of Sciences; secretary of the American Pomological Society; originator of a grass garden, a botanical garden, an arboretum, a weed garden and a botanical museum; he wrote a number of books including the first Grass Flora of North America and many bulletins and scientific articles; was a force in starting the "Farmer's Institutes"; planned some of the roads and walks on the campus; planted and tended many trees and shrubs including those in the "Pinetum"; started the first seed-testing laboratory in the United States; initiated in 1879 what is probably the first long-term seed longevity experiment, a study which is only now coming to a close (Kivilaan and Bandurski 1981); performed in 1877 important experiments on the corn plant demonstrating that when yellow flint and yellow dent strains were forced to cross, the yield was increased considerably. Drs. Davenport, Holden and Shull followed his leads and produced inbred lines elsewhere, which, in turn, led to modern hybrid corn.

Dr. Beal had some assistance during his long stay here and the names of these co-workers can be found in a summary list in another section of this book.

1298
date
1929
Q. 47
The next chairman was Dr. Ernst A. Bessey who served from 1910-1945, almost as long a tenure as Dr. Beal. His father was the renowned scientist Dr. Charles Bessey, a former student here and a teacher at both Iowa State University and at the University of Nebraska. Some of the milestones in Dr. Bessey's life were summarized for me by the late Dr. Herbert Beeskow: 1896 - A.B. from the University of Nebraska; 1897 - B.S. and in 1899 - M.A., both from the University of Nebraska; 1899-1908 - studied in Europe and collected in Russia, Turkestan, Syria and Algeria for the USDA (one notable fact was that he first introduced the ~~fig tree~~^{date} into the United States from Syria); 1904 - Ph.D. from the University of Halle under Dr. Klebs; 1909⁸-1910, Professor of Botany at Louisiana State University; 1910-1945 - Professor and Head of Botany at Michigan State University; 1927-1934⁴ - Acting Dean and later Dean, Division of Applied Science and the graduate school plus regular departmental duties; 1939-1940 - Visiting Professor, University of Hawaii; 1950 - published "Morphology and Taxonomy of the Fungi";¹⁹⁵⁶ recognized as one of the 50 outstanding botanists of his time by the Botanical Society of America. Dr. Bessey also made contributions in the field of plant pathology. He died in East Lansing the 17th of July 1957 at the age of 80 years.

Dr. Bessey's staff was never large nor too well-paid. Departmental equipment deteriorated greatly during his long regime.

In 1945, Dr. F. Lyle Wynd was brought in from the University of Illinois as a replacement for Dr. Bessey. He was a physiologist of note but resigned from the headship in 1948 to continue on the faculty until the 31st of December 1954.

Dr. William B. Drew had been engaged as a taxonomist in 1945 by Dr. Wynd and he taught several courses until his appointment as chairman on April 1, 1948. He had been trained as a taxonomist at Harvard University but one of his most popular courses was Economic Botany. Drew served as chairman until 1973 after which he continued on in the department until his retirement in 1976.

Some events in his career before and during his tenure here were supplied to me by him as follows; he searched, with a team, in Latin America for rubber substitutes; he worked with AID as a consultant in Argentina, Indonesia, Taiwan and Thailand; he led a group in a study of all levels of education, extension and research in Thailand; he assisted in evaluating a four-year program at six universities in Brazil; he served with Dr. Anton Lang in Vietnam studying the effects of the herbicides used by the United States military forces; with Drs. Cantlon and Gillett, he pressured the Administration to save most of our outdoor study area known as The Sanford Woodlot. In 1964 the Carter Report on Graduate Education in the United States emerged and our department was listed 13th nationally. In 1969, the Roose-Anderson Report rated us 9th nationally.

In 1973, Dr. Edward Klos was named Acting Chairman while a search went on for a replacement for Drew. In 1972, Dr. Fred Tschirley, in government service, received the Superior Service Award from the USDA and in 1974 was chosen as our Chairman. He served in this position until 1979 thereafter serving as Pesticide Coordinator until his retirement in 1984. He also taught courses within our department.

Dr. Edward Klos became the new chairman in 1979. Although laden with administrative duties within the department proper, he also coordinates the work

of our staff with the Agricultural Experiment Station and the Cooperative Extension Service. Klos had been engaged in fruit tree pathology and he carries on research in plant pathology along with his other duties. He has been honored with a medal from the Agricultural Ministry of Poland and has a Citation from the Warsaw Agricultural University.

The bulk of the research and teaching in any department is done by the devoted members of the faculty. It is now proposed to pay tribute to past and present faculty members treating their work under their various areas of interest.

PHYTOPATHOLOGY

Much of the information in this area has been contributed by Dr. Axel Andersen (in 1976). As early as 1875, botany instruction included "fungi -- moulds, rust, mildew, dry rot -- as connected to disease". Dr. W.J. Beal recommended in the first annual report of the Agricultural Experiment Station, horticultural experiments include -" pathological researches concerning diseases of plants especially peach yellow, rotting of plums and cherries, apple scab, tomato and potato rot, blackberry, strawberry and raspberry rusts, grape rots and gooseberry mildew."

The first special class on the study of fungous diseases of plants was conducted in 1904 by Burton O. Longyear (1894-1904), consulting botanist to the AES. In 1905, 19 seniors were enrolled in Beal's course in "parasitic fungi" and in 1906 there was a class in "plant pathology."

Personnel in the Farm Crops and Horticulture Departments contributed greatly to our understanding of disease problems: Professor L.R. Taft reported

in 1889 on tests of five fungicides for the control of apple scab; in 1893 his investigations for the control of disease using Bordeaux Mixture were cited; in 1908 he issued, with co-authors, the first "Spray Calendar"; P.M. Harvard and P.G. Holden devoted, in 1892, the entire Farm Department report to their investigations on hot water treatment for oat seeds to control loose smut and stinking smut of wheat, a method discovered by J.L. Jensen of Denmark in 1887.

Charles Fay Wheeler (1890-1902) was for a time Consulting Botanist to the APS and he reported on plant diseases caused by fungi, studied specimens of black knot, apple scab and celery leaf blight. He also worked on corn smut and the diseases of field crops.

Dr. Bessey, mentioned previously, found time to study the orange rust of raspberries and blackberries. Ruth Allen (1910-1914) was an authority on the cytology of the rust fungi. She continued this research at Wellesley College in 1914 and in the USDA where she worked until her retirement in 1936. She will also be remembered as the sponsor of the Ruth Allen Award given annually by the American Phytopathological Society to an outstanding pathologist. (Obituary in *Phytopathology*, August 1974, p. 885). Dr. George Herbert Coons (1910-1929) researched potato diseases and later those of the sugar beet for the USDA (Obituary in *The Washington Star*, April 21, 1980).

Another well-known pathologist was Jessie Howard Muncie (1913-1917; 1929-1954). He did extensive work on potato diseases but worked on many other crops such as beans, sugar beets, tomatoes, celery, cucumbers, cereals and even on ornamental plants, publishing over 60 papers on his research. A more extensive account of his activities may be found in *Phytopathology* 45(10),

October 1955 written by Drs. D. deZeeuw and W.J. Hooker. Ray Nelson was on the faculty here for almost 50 years (1918-1967) although he was in his later years, troubled by health problems. He took Muncie's place when the later left for the first time. He was an authority on mint diseases and the development of resistant varieties, on Fusarium yellows in celery and diseases on the gladiolus. Andersen and Lockwood have written an obituary in *Phytopathology* 59(6), 1969.

Carlyle Wilson Bennett (1917-1928) well-known for his work on fruit diseases, left here for the Ohio Agricultural Experiment Station and from 1929 until 1966 worked for USDA. John E. Kotila (1920-1930) was in charge of potato seed treatment investigations at the Michigan Upper Peninsula Experiment Station. He discovered that the lack of boron in Michigan soils was causing the decay of sugar beets and was an international authority on certain diseases of the sugar beet. In 1930 he joined the USDA and died at the early age of 58. The April 2, 1951 issue of *Mining Gazette* (Hancock, Houghton Co., Michigan) contains his obituary.

Forrest Cook Strong was an assistant here from 1924 to 1925 and was added to the faculty in 1925 where he did outstanding service until retirement in 1962. He researched tree diseases such as those on oak and elms and in the 1930's was remembered for his recommendation to immediately remove any trees showing Dutch Elm disease. From 1944 to 1946 he was president of the National Shade Tree Conference. An obituary appears in *Phytopathology* 60(3):, March 1970.

Chronologically, the next faculty member was Donald Cation (1931-1968). In 1933 he proved that a peach rosette was infectious in nature. He

demonstrated that cherry yellows virus complex was transmitted through seeds and that the peach rosette mosaic was transmitted by the nematode Xiphinema americanum. Dr. Klos has written an account of the many accomplishments of "Don" in *Phytopathology* 59(7):, 1969.

Horace Leslie Barnett (1937-1938; 1939-1940) had his Ph.D. degree from here, left for West Virginia University and was President of the American Phytopathological Society. Ralph Lewis (1937-1944) was engaged in research on Claviceps and teaching botany courses before transferring to the Department of Natural Sciences. Axel L. Andersen was appointed as research assistant in pathology in 1939. From 1939 to 1942 he assisted Ray Nelson on celery and ornamental plant diseases. He also taught general botany. After serving in WW II he returned as a USDA employee to initiate bean disease and breeding programs. In 1951, he had a joint appointment with the botany department. From 1965 to 1968 he served in the office of the USDA Secretary in Washington, returning here to head up the Extension Plant Pathology and to serve as coordinator for remote sensing. Dr. Andersen retired in 1977.

An exceedingly well-like pathologist was the late Miriam Strong. She received her B.S. degree from MAC in 1922 and was appointed as assistant to Dr. Coons upon attainment of her Masters degree in 1924. From 1940 until 1962 she was an Assistant Professor in research and worked tirelessly on the control of plant diseases especially those of the tomato. Dr. W.B. Drew has written a fine account of her work in *Phytopathology* 60(3):, March 1970.

From 1943 to 1946 Darrell Marshall McLean was a research Assistant Professor after which he left to work in the USDA. Louis Carl Knorr was an

Extension Pathologist from 1945 to 1948 and again from 1971 to 1974. John Raymond Vaughn 1947-1955, left for the University of Wyoming where he became an Assistant Dean. Edward A. Andrews (1948-1955), an extension specialist, replaced Knorr and Donald John deZeeuw (1948-1976) replaced McLean and did significant work on the diseases of cucurbits. More data on deZeeuw will be found in a section entitled "Facilities." Although Thomas T. McClure (1949, 1950?-1952) was only with us a short time, he did excellent work elsewhere as recounted in *Phytopathology* for March 1974, p 431. Two other conscientious pathologists should be mentioned, Robert Harry Fulton (1952-1959) and Richard Lorin Kiesling (1952-1960).

Robert Paul Scheffer (1953-1988) is a keen student of parasitism and mycotoxins as they relate to ornamental and other plants. He is a Fellow of the American Phytopathological Society, received the Distinguished Faculty Award, a Distinguished Service Award from the Michigan Florists Association and he also was an NIH Research Fellow at Rockefeller University 1960-1961. Nicky Smith (1953-1978) was our Extension Specialist in plant pathology helping to solve the problems of growers of both field and ornamental crops. His work will be long remembered. Dr. Edward Klos (1954-), our present department Chairman, has been recognized above in our treatment of the various persons who have guided us over the years.

William James Hooker (1955-1979), the replacement for Dr. Muncie, came to us from Iowa State University to carry on research on potato diseases including those of a viral nature; he also studied the potato for some time in its native South American home. In 1959, Hooker was President of the Potato

Association of America. His invention of the clever LabLine-Hooker plant microtome enabled researchers to cut fresh sections in a more satisfactory manner than had been done before.

John LeBaron Lockwood (1955-), was a graduate of this department but took his Ph.D. from the University of Wisconsin. He replaced, in part, Ray Nelson whose failing health had led to a disability leave. From 1970 to 1971, Lockwood was an NSF Senior Research Fellow, gained an Alumni Distinguished Faculty Award from Michigan State University and is, at present, a Fellow of the American Phytopathological Society.

Harry H. Murakishi (1956-1988) came the year after Hooker and Lockwood and from the Chairmanship of Botany at the University of Hawaii. He is a specialist in the field of virology. In 1955 he held a Guggenheim Fellowship; in 1980 he was awarded the Ruth Allen Award from the APS and recently has been a Fellow of the APS in recognition of the high caliber of esteem in which he is held by his colleagues. Howard Spencer Potter* (1956-1984) had his Ph.D. from the University of ^Maryland. He was a biologist with the State Fish Commission of Pennsylvania, the Food and Agriculture Organization of the U.N., the United States Service Department, the United States Forest ^eService and the University of Maryland. His research was on soil-inhabiting organisms and cultural and chemical methods for their control. Ervin Henry Barnes (1959-1967) was hired to replace Fulton in the work on small fruit diseases. His help was invaluable

He died
*Died 9 March 1989

in breeding for resistance to Verticillium wilt in strawberries and in efforts to solve the baffling new problem of Fusicoccum canker in blueberries. The canker

is an especially serious disease in northern Michigan. Shortly before his untimely death in 1967 he prepared a laboratory manual, with the help of Philip Coleman, called "Atlas and Manual of Plant Pathology" complete with 270 color slides. Drs. Ellinboe's and Lockwood's obituary of Barnes is to be found in Phytopathology 59(7) in 1969.

Albert Harian Ellingboe (1960-1982) replaced Kiesling and came to be highly regarded for his keen research on the genetics of plant disease. Unfortunately he left in 1982 for the business world but has lately moved to the University of Wisconsin. John Henderson Hart (1963-) replaced the late Forrest Strong and continued on with the diseases of woody plants. He was a Visiting Fellow in Australia and a Visiting Scientist at the University of Victoria in British Columbia. David Louis Mumford was here with the USDA sugar beet unit from 1963-1967. Melvin L. Lacy (1965-) replaced, in part, Ray Nelson whose work had been concentrated in the mints and their oils, and in celery diseases.

Charles Schneider (1966-1983) replaced Mumford and continued the work on beets and, in 1987, was replaced by John H. Halloin, also with USDA/ARS. Alfred W. Saettler (1967-) also on joint appointment with the USDA has made significant progress in the many problems affecting field beans. Turf-grasses are also beset with many serious pathological problems and Joseph Vargas, Jr. (1968-) is researching this field of specialization. Alan L. Jones (1968-) replaced ^{Rios} Gation and had one half time in extension and the remainder in research. His main concerns are fruit tree diseases. In 1978 Jones received the APS-Ciba National Award in Agriculture and in 1987 was given the Distinguished Service Award from the Michigan ^{State} Horticultural Society. He, with P. David Fisher,

invented an Apple Scab Detector which will prove of great value to the fruit growers.

Gary Hooper (1968-1971; 1973-1980) was the first to find and report mycoplasma in Michigan crops; he was also a leader in the use of the computer in plant disease diagnosis. Maurice Victor Wiese (1969-1978) is another scientist who left for a position elsewhere. His work was on the physiology and control of wheat diseases. Clyde L. Burton (1971-) carries on research here for the USDA/ARS unit.

Franklin Laemmlen (1972-1980) was appointed to be in charge of the Plant Disease Diagnostic Laboratory with his research devoted to ornamental plants. Donald C. Ramsdell (1972-) was to carry on needed research on the diseases of the small fruits. In 1980 Don received the APS Lee M. Hutchins Award. Gene Robert Safir (1972-) was added the same year for remote sensing work but was later asked to research mycorrhizae. He recently received the APS Ciba-Geigy Award.

George Scott Ayers (1974-) has a joint appointment with entomology and George William Bird (1973-) also a joint appointee with Entomology, is our chief reference person when nematode problems are encountered; he is an international authority in nematology.

L. Patrick Hart (1978-) is in Extension working on the diseases of field crops. He recently invented, with J.J. Peska, a kit to detect toxic chemicals in food. Christine Taylor Stephens (1978-) is one of our Extension Specialists and is engaged with the diseases of bedding plants and vegetables. She has been awarded MSU Woman's Achievement Award, the Young Professional Achievement Award and the APS Ciba-Geigy Award.

Dennis Fulbright (1979-) was hired in the plant pathology field and has attained international renown for his work with the organism causing chestnut blight. Raymond Hammerschmidt (1980-) was added to the faculty as an expert in the biochemistry of disease resistance. He also has teaching responsibilities.

Gerard Adams (1984-) is a fairly recent appointee as a researcher on the diseases of ornamental plants and the genetics and taxonomy of the fungi. Shauna Somerville was appointed in 1986 as a plant pathologist with an interest in studying host-pathogen interactions.

MYCOLOGY

Plant pathology and mycology are closely-related and the importance of fungi was appreciated quite early in our history. Although not a mycologist, Beal brought fungi to the attention of his students dwelling especially on the destructive taxa. Bessey was a trained mycologist, ^{and} did significant work on the fungi although burdened with much administrative work. His textbook has been mentioned previously.

Constantine John Alexopolous (1947-1956) was our first full-time worker in mycology. His major interest was with the myxomycetes and his renown called him to the University of Iowa where there was a huge collection of these already at hand. After some years at Iowa, he moved to the Department of Botany, University of Texas at Austin. On May 15, 1986 he passed away after a long, painful illness.

Everett S. Beneke (1948-1988), although heavily-loaded with teaching responsibilities, found time to do research on Calvicin, an anti-cancer agent and

to write several editions of his popular manual on medical mycology. He also wrote "The Scope Monograph on Human Mycoses" used by medical students all around the world; initiated a course in industrial mycology; and started the first course in medical mycology in South America dealing with animal mycoses. Some of his honors include the W.H. Weston, Jr^o Award for Teaching Excellence in Mycology; a President's Certificate from the Medical Mycological Society of the Americas; a Junior Sigma Xi Award, a WHO United Nations Fellowship, a Fellow of AAAS; several Merit Awards in the field of bioanalysis, an Upjohn Award, and a Rhoda Benham Award. He has traveled and taught extensively in several countries.

Edward Cantino (1956-1983) was a replacement for Alexopolous. His research, however, was in the water molds, a field in which he gained international attention. At MSU he was awarded a Distinguished Faculty Award. His premature death in 1983 was a shock to all of his colleagues.

Henry A. Imshaug (1956-) is the Curator of the large cryptogamic herbarium. He specializes in lichens but is also accomplished in mycology. He received a Fulbright in 1952 and later was Chief Scientist and Coordinator for several NSF expeditions to New Zealand and South America.

Alvin L. Rogers (1965-) is a Professor of Medical Mycology with a joint appointment and co-director of the Clinical (Medical) Mycology Laboratory. He also teaches mycological and microbiological courses but has taken time to research the host-parasite relationships of Candida species. He is co-author of the popular Medical Mycology Manual and the Scope Monograph on Human Mycoses. Dr. Rogers has organized and presented two medical mycology traveling workshops in many cities in the United States for the American Society

of Microbiology.

William Grady Fields (1967-1975) was appointed to the faculty to take over some of the over-load in the teaching of mycology, a field which was having an enormous growth at the time. His Ph.D. was from Wayne State University. His post-doctoral training was with Dr. Lindsay S. Olive of Columbia University on Sordaria brevicollis and he pursued this work in his research until his untimely death in 1975. He was the author of numerous articles in his field. Stanley L. Flegler has written an obituary of Dr. Fields which may be found in Mycologia 68:229 ff, issued July 2, 1976.

Jonathan Walton, appointed in 1987, does research in molecular plant pathology.

ANATOMY, MORPHOLOGY, CYTOLOGY AND MOLECULAR BIOLOGY

Structural botany was early, and still is, considered one of the basic facets of plant science. Goadby, Prentiss, Beal and Thurber all stressed a knowledge of structure. Under Bessey's tenure, Edward Woodcock (1914-1950) was appointed; a man who had his training at Yale University. He had been head of the biology department at Juniata College in Pennsylvania after his Bachelor's degree and an Instructor at the University of West Virginia. Despite the onerous teaching load placed upon him, Richard DeZeeuw and others, he published 31 papers on many plants including the latex-bearing species. Dr. Axel Andersen has placed the above and some other curriculum vitae at my disposal.

Carl Swanson (1941-1943) and Robert Lowry (1946-1948) were here briefly in the field of cytology. The former went to the John Hopkins University

receiving national honors there while the latter took over a more responsible position at the University of Michigan. G. Bernard Wilson (1949-1968) was with us longer and also in the field of cytology. He earned an enviable reputation in the more than 50 papers and three books which he published. This promising career was brought to an end in 1968 after a long bout with cancer. Dr. Prescott has summarized Wilson's life in the Transactions of the American Microscopical Society Vol. 87(2), pages 210 to 213, 1968.

Leo Mericle (1950-1982) was hired to replace Dr. Woodcock although his training was more in genetics and physics. He had visiting privileges at both Brookhaven and the Arctic and Alpine Institute. Irving W. Knobloch (1959-1976) taught in the Biological and in the Natural Science Department, as it was later called, from 1945 to 1959. His training was under the anatomists Drs. Hicks, E.C. Jeffrey and John Sass. In this Department he taught general botany, anatomy, histological technique and initiated a new course for non-majors called "Plants and Man". He was an officer in the ^{BSA} ~~ABS~~ Teaching Section, on the Council of the ^{of America} ~~American~~ Botanical Society, President of the American Fern Society and Director of the NSF 5th Institute for College Teachers of Botany. He has published 120 articles including seven books in anatomy, speciation, fern cytology and biology.

William Tai (1969-1982) was brought in as a cytologist and researched and taught in that area. He was replaced by Barbara B. Sears (1983-) with her Ph.D. from Duke University. Her interest is in the genetics and biology of the chloroplast. Barbara has been honored by a Faculty Achievement Award from Texas A.& M. University. Wayne Weidlich (1976-1982) was brought to replace, in part, the work of Knobloch in the field of anatomy and Frank Ewers (1984-)

replaced Weidlich. His research deals with experimental plant anatomy and xylem structure.

Karen Klomparens neé Baker (1981-) has three degrees from MSU, is in charge of the Center for Electron Optics and works on the ultrastructure of fungi. We mentioned genetics in connection with other members but with the employment in 1982 of Christopher Somerville we now have a prominent molecular geneticist whose talents we share with DOE. Somerville has been previously honored with an NSF Presidential Investigator Award. Natasha Raikhel (1986-) and in 1987 John Ohlrogge were added to the faculty in the Molecular Cell Biology field.

TAXONOMY

This field is certainly one of the oldest because, even before the birth of science people were forced to put names on things. The practice of taxonomy has changed radically and for the better in just the last few decades. Scientists in every field of biology now realize that research based upon a mis-named organism is of little value.

Neither Goadby nor Prentiss were taxonomists but some plant taxonomy courses were given. Thurber (1860-1863) could be considered a taxonomist for his collecting and writings in connection with the United States and Mexican Boundary Survey. Many medical doctors, like Thurber, were avid botanists because of the close connections then between medicine and the use of plants in the cure of disease. Henry T. Darlington (1914-1945) was our first full-time taxonomist and had a doctorate from the University of Chicago. He was 89 at

the time of his death and worked some at the herbarium from retirement until a short time before his death. Two of his well-known students were Drs. H.J. Oosting and Eugene Ogden. He was in charge of the Beal gardens from 1914 to 1929 and the herbarium is fitly named "The Beal-Darlington Herbarium". He also assayed Dr. Beal's seed viability experiment for years and wrote, with Dr. Crum, a fine book entitled "The Mosses of Michigan".

William B. Drew (1945-1976) has been mentioned before as an administrator but he also taught a course in Economic plants for years, a course which is entwined with taxonomy. I should note that he was trained as a taxonomist at Harvard University. Charles Louis Gilly (1948-1954) was a well-trained taxonomist hired by Drew and he served until a serious illness forced his retirement. George Parmelee (1952-1986) had a joint appointment with the Campus Parks and Planning unit and took his degree under Gilly with his thesis on Bear Bog, a relic glacial pond in this area. Most of his endeavors have been devoted to the collection of woody plants on the campus as Curator of Woody Plants, 3010 Curator of the Beal-Darlington Herbarium.

Gilly was followed by Quentin Jones (1954-1956), a Harvard graduate. In 1956 he stepped upwards into government work, an area in which he is well-known. John Homer Beaman (1956-) is our present vascular plant taxonomist and is Curator of the Beal-Darlington Herbarium, about which more will be said later. Beaman is a specialist in the Compositae family; he held, in 1965, a NAS-NRC Senior Postdoctoral Visiting Research Fellowship at the Smithsonian Institution; in 1983 he held a Fulbright Fellowship at the National University of Malaysia; later he handled NSF awards in systematic botany in Washington, D.C.

Jack Elliott (1946-1969) also taught taxonomy and ecology before transferring to the Lyman Briggs College on campus.

George Gillett (1956-1962) was hired to teach general botany at which he did a splendid job but he was an accomplished taxonomist and published in this area while here and later at both the University of Hawaii and the University of California, Riverside. Dr. H. Imshaug, mentioned earlier, is also versed in taxonomy.

In 1988 Gerard Donnelly became Curator of the Beal Botanic Garden where his considerable talents are already showing results. He is also Curator of Woody Plants.

ALGOLOGY

Algae, recognized as the base plant in life's food chain, ^{was} given some treatment in the days before Drew's chairmanship. However, the first recognized algologist on this campus was Gerald W. Prescott (1946-1968). He taught various subjects here including general botany and morphology (in which he gave three courses). He gained an international reputation for his papers and books on the algae of the Great Lakes region and on the desmids. The Gerald Prescott Award in Algology has recently been imitated in his honor. Dr. Prescott died July 7, 1988.

Brian Moss (1968-1971) was a visiting Professor here from England and briefly replaced Prescott. Much of his algal research is in Africa. C. Peter Wolk (1965-) is an blue green algal physiologist who has a joint appointment with DOE and who has won the Botanical Society of America's Darbaker Award. He

is now Director of DOE. Robert George Wetzel (1965-1986) had a joint appointment with the Kellogg Biological Station and is a well-known limnologist. He had a Fellowship from AAAS and is now at the University of Michigan.

ECOLOGY

The writer remembers the rather unsophisticated type of ecology offered in the early part of this century and marvels at the present technical treatment. Ecologists are now at the forefront in attempting to not only save the tropical rainforests, including all their inhabitants, but to save the soil there and also guarantee that the atmosphere will have an adequate supply of the rainforests oxygen so necessary for man's survival.

As mentioned, both Elliott and Darlington taught ecology but John Cantlon (1954-1969) was probably the first trained person in this field. During his tenure, he was awarded a Distinguished Faculty Award. In 1969, his talents were recognized by the Administration and he became Provost and then a Vice-president for Research and Graduate Studies.

Stephen Neil Stephenson (1965-) came onto the faculty to teach ecology while Cantlon was still here. He was engaged to take over research projects and supervise graduate students as the load was more than one man could handle. He also teaches agrostology, a surprisingly-neglected field up to now, in a university so committed to agriculture. His specialty is the taxonomy of the grasses and population studies on them.

After Cantlon left for administration, Peter G. Murphy (1970-) was engaged to do both teaching and research in ecology. He became known as an expert in

tropical forests in Panama, Puerto Rico and Africa and has served numerous times as a consultant. He also has studied Dunecology. Patricia Ann Werner (1973-1980), a graduate of this university, has had a joint appointment with the Kellogg Biological Station. Gerard Donnelly has been mentioned under TAXONOMY but he is also an ecologist. In 1986 Stephen Tonsor and in 1988 Susan Kalisz became our joint appointees with the W. Kellogg Biological Station. Both work in plant ecological genetics.

PALEOBOTANY

One of the largely unsolved riddles of science is the mode and rate of evolution among plants. The field of paleobotany has made great strides in fitting pieces of this puzzle together. Theodore Delevoryas, an international authority, was with us for only the year 1955 to 1956. Presently he is at the University of Texas in Austin. Aureal Cross (1961-1986) had a joint appointment with geology. From 1943 to 1944 he held a National Research Council Fellowship. In 1951 he received an award from the Geological Society of America; in 1964 he was a Distinguished Lecturer for the American Association of Petroleum Geologists; in 1985 he had the Savard Award from the Sahní Institute of Paleobotany and in 1987 he received the Gilbert H. Cady Award for Coal Geology from the Geological Society of America. Ralph Taggart's (1971-) interests are in palynology and paleoecology and he has a joint appointment with the Biological Science Department. He had a NASA Administrative Fellowship from 1967 to 1970, a Distinguished Graduate Student Award from Sigma Xi in 1971 and in the same year, received a Bessey Memorial Award. He has written

a fine textbook in Biology.

PHYSIOLOGY

In the later part of the nineteenth century, a course on structural and physiological botany was offered because the two areas are so closely interdependent. Rufus Percival Hibbard (1911-1940) was our first physiologist with interests in mineral nutrition and other aspects of phytochemistry. His Ph.D. was from the University of Michigan in 1906. Hibbard was the second President of the American Society of Plant Physiologists. The late Dr. Beeskow had written an obituary which has further details and can be found in Plant Physiology 29(1):109, 1954.

One of Hibbard's students, Edward Jacob Petry was an Instructor and obtained his Ph.D. from this institution in 1925. His thesis dealt with the physiology of Ceanothus americanus. What is even more interesting is that this degree was the very first Ph.D. granted in the College (Kuhn 1955).

Herbert Beeskow (1929-1969) assisted Hibbard at first and became the sole physiologist in 1940 upon the retirement of Hibbard. Beeskow was undoubtedly one of the most popular lecturers ever to grace this department. As usual under Bessey, his teaching responsibilities were enormous with sometimes as many as 7 laboratory sessions each Monday, Wednesday and Friday. Three lectures were given each Tuesday and Thursday. An obituary of Beeskow was written by this editor for the Red Cedar Chapter of the Michigan Botanical Club shortly after the death of "Herb" on September 24, 1985.

F.Lyle Wynd entered the department as Chairman in 1945 and stayed on as a physiologist from 1948 until 1954. George Peter Steinbauer (1947-1961) was engaged to enlarge the course offerings in physiology. He was a skilled seed analyst and plant physiologist, publishing 48 papers during his short tenure here. He worked on the chemical control of our many field pest and dealt with the physiological problems affecting clovers, potatoes, ash, beans, peas and blueberries. Also, for some years, he assayed the results of Dr. Beal's seed viability experiment which had been started in 1879. George died after a heart attack on March 20, 1961. Lloyd Glen Wilson (1952-1985 - B.A. MSU; M.A., Ph.D. University of Wisconsin) worked at first with Drs. Bandurski and Steinbauer. When the Plant Research Laboratory was proposed, Wilson was assigned to do the major planning, a monumental task indeed. When ^{Lang} came on as the Director of PRL, Wilson was his aide from 1966 to 1974. He had a joint appointment until his retirement.

Robert Bandurski (1949; 1954-) came in 1949 to teach Steinbauer's courses and in 1954 he was employed to carry forward the Department's responsibilities in physiology. His interests are in sulphur and nucleic acid metabolism. Bandurski received the Junior Sigma Xi Award, a Distinguished Faculty Award, election to the Polish Academy of Science, received a ²Marck and National Research Fellowship, a Senior NSF Research Fellowship and lately, a silver medal from the International Plant Growth Substances Association. Alex Kivilaan (1957-1977), working in Bandurski's laboratory isolated for the first time, pure cell walls and demonstrated that they contained hydrolytic enzymes.

Norman Good (1962-1986) worked extensively in the field of photosynthesis, held a Guggenheim Fellowship from 1971 to 1978; in 1978 he received a Distinguished Faculty Award and later, the Charles Kettering Award from the American Society of Plant Physiologists. Clifford Pollard (1962-1988) taught the advanced physiology courses and researched the nucle^ci acids. In 1988 he resigned to take another position. Joseph Mochaitis (1964-1976) was a physiological geneticist working both with Bandurski and Kivilaan. Seikichi Izawa (1964-1966; 1968-1971) collaborated and published with Norman Good.

With the establishment of the plant research laboratory under the Atomic Energy Commission [now under the Department of Energy (DOE)], a number of their staff were given joint appointments. The Director, Anton Lang (1965-1983) is a physiologist of great note and was recently elected to the National Academy of Sciences. Previously he was a Fellow of AAAS, President of the Society for Developmental Biology, President of the American Society of Plant Physiologists, elected to an honorary membership in the German Botanical Society, ^{and} has a Charles Reed Barnes Life Membership and the Stephen Hales Prize of the American Society of Plant Physiologists.

Hans Kende (1965-) was another DOE appointee who held the Directorship before Dr. Wolk. From 1972 to 1973 he had a Guggenheim Fellowship. Jan A.D. Zeevaart (1965-) whose main interest centers around the hormonal regulation of plant growth and development, held a Guggenheim in 1973. Michael Jost became a joint appointee in 1966 and left about 1977. Klaus Raschke (1967-1979) had a Guggenheim Fellowship in 1975.

Kenneth Nadler (1970-) replaced Beeskow in part. From 1968-1970, he held a United States Health Service Postdoctoral Fellowship and has been

teaching the principal physiology course while developing a program on the genetics and physiology of Rhizobium legume root nodule symbiosis. Kenneth L. Poff (1974-) has a joint appointment with DOE. His field is photosensory and thermosensory transduction on plants.

John Ohlrogge (1987-) was invited to take the place of Norman Good and has been mentioned earlier under Molecular Cell Biology because of normal cross ties in subject matter.

WEED CONTROL

Most experts believe that crop production is greatly reduced by competition from weeds and, at one time, weed control was an important part of our program in this department. From 1935 to 1962 Buford Horace Grigsby was our specialist in this area. He had been an assistant here from 1932 to 1935 at the end of which time he earned the doctorate from MSC. He gained international prominence here and abroad for this work and, after retirement, spent many years working for foreign governments in many parts of the world.

DEPARTMENTAL ACTIVITIES

The Plant Disease Diagnostic Clinic

This valuable clinic has been in operation at least since 1961 when Dr. H. Spencer Potter was in charge. He continued in that capacity until 1972 when Dr. Franklin Laemmlen was brought in. Potter retired in 1984 and Laemmlen left in 1980.

Today over 4,000 specimens are brought or sent into the clinic each year for diagnosis and many phone and written requests are answered. All

specimens received are entered into a computer by name of sender, code number, date and host. A clinic slip is also prepared on a computer and a copy sent to the inquirer. Thus we continue to fulfill the original purpose of the University which was to be of the utmost service to the agricultural community. Some of the clinicians and specialists who have served us well were Herman Warren, Delbert Bierlein, Harold Bochstahler*, Richard Crum, Sandra Perry and Dr. David L. Roberts. Dr. Roberts is in charge of the clinic and a faculty member.

Herbaria

Both Beal (1915) and Kuhn (1955) indicate that in 1863 there were 20,000 specimens on hand donated by Mrs. Clarissa Babbitt, former wife of Dr. Dennis Cooley; hence the name of the herbarium at that time was called the "Cooley Herbarium". It is now named the "Beal-Darlington Herbarium". At present there are about 250,000 vascular plants. The collection is vital to the research of all students majoring in plant systematics and it serves as a documentative source for students in ecology, anatomy, cytology, morphology and paleobotany. Its specimens are used in at least three courses, it is consulted by MSU personnel outside the department and it provides answers to questions asked by the general public. Some of the major contributors have been Beal, John Churchill, Irving W. Knobloch, A. Phelps, William Gillis, John Beaman, D.C.D. DeJong, J.W.Anderson, G.E. Crow, J.J. Furlow, J.L. Grashoff, E.K. Longpre, W.P. Stevens, P. van Faasen, E.K. Roberts, E.E. Watson, C.G. Pringle and J. Rzedowski.

*Died July 10, 1987 in Bloomington, Indiana, at the age of 80

The non-vascular plants are curated by Dr. Henry Imshaug and this collection of about 150,000 taxa is housed in the Plant Biology Building as is the Beal-Darlington collection.

A collection of fossil plants is housed within the Department of Geology and was curated by Aureal Cross until his retirement.

Michigan Flora

In the late 1800's, William J. Beal and Charles F. Wheeler made a preliminary list of Michigan Plants and in 1904, Beal published a second edition in the Proceedings of the State Academy of Science entitled "Michigan Flora, a list of the ferns and seed plants growing without cultivation", Rep. Mich. Acad. Sci. 5:1-147. Dr. Edward Voss of the University of Michigan, has brought our flora up to date with the publication of the second volume dealing with the flowering plants of the state. A third volume is planned.

Student Clubs

Am Aradobe ? Clubs have such valuable functions as that of creating a spirit of comradery among the members and between the members and the Faculty. According to Beal's book, there was a Botanical Field Club here in 1886. On September 26, 1890, its name was changed to M.A.C. Botanical Club; this club became dormant about 1910. About 1913, George H. Coons started a club call "Seminarium Botanicum" a name usually shortened to "Sem Bot". Its purpose was to recognize scholastic achievements, to sponsor social and educational programs, to work for the advancement of the botanical profession and to

promote fraternal relationships. The organization was very formal and elaborate and there was a rigorous initiation examination, one which not all passed. Students gave reports on current topics, learned to read research in foreign languages, took field trips and collected specimens for the herbarium.

Today, the plant pathology students have an active club which performs some of the above functions. Students in other areas are encouraged to join the Red Cedar Chapter of the Michigan Botanical Club or the Michigan Nature Association, both very fine organizations, among others.

STUDENT AWARDS

Bessey Memorial Awards

After Dr. Bessey's death, friends and relatives established a fund in his honor, the income from which was to be used to reward excellence among our graduate students. In 1961, sufficient funds were available and the first recipient was Clifford Wetmore. Awards have been made almost every year since the funds inception. Two of our present faculty were aided ^{viz.?} e.g. Alvin Rogers in 1964 and Ralph Taggart in 1971. Undergraduate awards were made almost every year and sometimes two in a year. Judith McKillen received the first undergraduate award in 1961. The recipients of both type ^S are named on plaques on the wall near the department office.

William G. Fields Graduate Award for Excellence in Teaching

After the tragic death of Dr. Fields in 1975, a fund was established for the purpose named. Karen L. Klomparens, now Director of our Electron Optics Laboratory, was the first recipient. The winners of the Fields' ^{je} awards are also on a plaque near the Bessey award plaque.

FACILITIES

HOUSING

second or 2nd page
The first three buildings erected on the campus in 1857 are mentioned on the ~~third~~ page. The first laboratory for botanical studies was erected and occupied in 1880. This was situated on the bank of a former brook north of the Beal Botanical Garden, was two stories high and of gothic design. On March 23, 1890 this building burned to the ground. The cornerstone of the second botanical building was laid on June 22, 1892 on what is now called Circle Drive. Classes moved into it in 1893. It was a well-built structure but not adequate for the students and faculty even in Bessey's day. Some additional space was utilized in the nearby forestry building. The second botany building cost \$10,000 and, in 1909, an annex was added costing \$15,000. Due to its unique design, the old botany building has been preserved and is now occupied by another group.

About 1945 to 1946, large numbers of WW II veterans were returning to the campus to complete their interrupted education and one of the structures erected to take care of their needs was a new Natural Science building, south of the horticulture edifice. This was to house botany as well as other science departments. The first floor and some of the offices were ready in 1948 but the entire building was not ready until the spring of 1949. There our facilities were better but Beneke and Wilson had to be housed in the new experimental biology buildings on Wilson Road and Hooker conducted his potato research in a pre-fabricated structure called the "Mead Building".

✓ Another move was in the offering in the 1960's; this time into the Plant Biology Building on Wilson Road. First a research laboratory was to be built by the Atomic Energy Commission, and later, an addition to house the department

of botany and plant pathology. The AEC building came to be known as the Plant Research Laboratory and how it came to be built was related to me by Robert Bandurski.

of The AEC had conducted a "run-away reactor" experiment from 1959 to 1960. Glen Seaborg, then Chairman of the AEC, witnessed the catastrophic defoliation of the forest in Georgia and asked his associate J. Livermore, who had been a student at Cal. Tech., what should be done. Livermore formed a committee, on which Bandurski served, which recommended the establishment to the PRL. About fifty universities competed for the honor of having the first PRL and this university was chosen because of its outstanding faculty. The proposal was approved in December of 1963 and the building was finished in 1966. Bandurski served as its organizer and was acting director until Dr. Lang came on the scene. Lloyd Wilson was the first staff appointee and was charged with designing the building and supervising its construction. [It is interesting to note that the PRL cost \$2,200,000 and was paid off in ten years by the AEC.]

When the PRL was nearly finished, Dr. Richard Cauldicott, who had chaired AEC Committee, suggested to Dean R. Byerrum and Bandurski that they try to get matching funds for a new botany building to be attached to the PRL. Bandurski wrote the first drafts of the NSF application and Dr. Livingston at NSF approved the construction as of 1965 with a completion date of 1968. Again Lloyd Wilson did most of the building planning although Donald deZeeuw, who had been Assistant Chairman for Agricultural Affairs in the planning of our new field facilities, took over the allocation of space for offices and laboratories in the new botany building.

Not long after we entered the botany building, a pesticide research center was erected south of our building. In addition a wing has been added onto the PRL in which molecular biology work will be conducted. And just east of the botany building there has arisen a mammoth edifice to house both the crop and soil science and the horticulture departments.

BEAL BOTANICAL GARDEN

This facility is near the front entrance to the main library and was started in 1873 by William J. Beal. At first it consisted of 140 plots of grasses and clovers but in 1919, when Beal retired, the garden contained 2100 taxa. In 1950 an edict from the Administration transferred the control of the garden over to Campus Parks and Planning. Fortunately, one of our botany graduates, George Parmelee, was placed in charge of it because a trained taxonomist was needed. In 1985, George had 5,000 taxa in place in well-organized sections. In 1988 Dr. Gerard Donnelly, an MSU graduate, assumed Parmelee's place.

Today, thousands of visitors and students are attracted to the garden's delights and educational opportunities.

ARBORETUM

In 1875, Beal and his students planted 215 species of trees and shrubs on about an acre and a half of land located at the north entrance of the college. They also planted a large number of pines east of Hagadorn Road and south of the river. This was called The Pinetum. Today, the campus contains thousands of different species and is truly a wonderland for students of woody plants.

GREENHOUSES

These structures have always been a feature of any botany department because they not only supply living plants for many courses but they contain many rare or unusual plants, all correctly named. The first greenhouse on this campus was built in 1866 for Professor Prentiss but this had to be torn down in 1874. In the same year, a series of greenhouses were constructed near the present Beal Garden but they burned down in 1890. Two years later, they were rebuilt but later had to make room for the new Library.

The old botany building on Circle Drive, built in 1892, had a sunken pit attached to it in 1911 which served the department for growing plants. About 1930, a headhouse and 2 banks of houses were attached to the pit house. More than 50 years later, we are still using these greenhouses.

According to Lautner (1977-1978), the horticulture department erected their greenhouses in 1924 just south of the department's classroom building. Because of our critical shortage of room, a large room in the horticulture greenhouses was assigned to this department. With the move of our sister department to facilities on Wilson Road complete with new greenhouses, [it is possible that] our work can continue in the vacated space although this is still too far away from the center of our activities. We have had many fine young men and women working in our greenhouses over the years. William McKane, now deceased, was our former foreman. John Mugg is presently in charge.

PROMINENT ALUMNI

The Department of Botany and Plant Pathology has had many alumni who have gone on to fame. Space does not allow us to list all, but some come to mind as especially noteworthy. These are listed below.

Eugene Ogden (B.S. 1932) was the former New York State Botanist and is an authority on Potamogeton; John R. Reeder (B.A. 1939) is one of the world's authorities on grasses, especially those in Mexico; Henry J. Oosting (M.S. 1927) was one of the greatest ecologists of our time; Simon Wolff (B.S. 1926, M.S. 1928) gained prominence at the Texas State Experiment Station and with the U.S. Soil Conservation Service - he also donated his herbarium of some 5,000 specimens to our herbarium; Richard A. Giles (M.S. 1941, Ph.D. 1955) was a Professor at Eastern Michigan State University; George Parmelee (B.S. 1941, M.S. 1947, Ph.D. 1953) was Acting Curator of the Herbarium from 1952 to 1953. He has had charge of the Beal Botanical Garden until recently and was also Curator of Woody Plants; Harold John Lutz (B.S. 1924) dealt essentially with forest ecology in the U.S. Forest Service, the Allegheny Forest Experiment Station, the Connecticut Experiment Station, at Pennsylvania State College and from 1965 to 1968 as Oastler Professor of Forest Ecology at Yale; James William Toumey (B.S. 1889, M.S. 1895) held many positions among which were Morris K. Jessup Professor of Silviculture, Director of the School of Forestry, Dean and Chairman of the Department of Forestry, all at Yale; Liberty Hyde Bailey (B.S. 1882) was a student of William Beal, studied under and assisted Asa Gray and Louis Agassiz at Harvard, was Professor of Horticulture here at MSU for several years but came into his greatest glory at Cornell University where he became an authority on horticulture plants, especially the palms. He wrote over ninety

books and hundreds of articles. There are two books and at least one major article published on his amazing life; John Broderick Routien (Ph.D. 1940) was a mycologist who taught at the University of Missouri and worked for years at the Charles Pfizer Co.; Horace Leslie Barnett (Ph.D. 1937) was an Instructor and Assistant Professor here during 1937 to 1940. Most of his scientific life was then spent at the Agricultural Experiment Station at West Virginia University, Morgantown.

Edgar S. Anderson had his B.S. degree here in 1918 after studying under Dr. Bessey. His advanced degrees were from Harvard University. From 1931 to 1935 he was both an arborist and lecturer at Harvard. Two of his other appointments were at the Henry Shaw School of Botany in Washington University, and also at the Missouri Botanic Garden. He was of immense stature and in 1954, he was elected to the National Academy of Science. His work on Iris, Tripsacum, Zea, Apocynum and Tradescantia are well-known.

Mong-shang, Kuo, Ph.D. 1968, was Dean of Agriculture at Taichung, Taiwan and President of Ping-Tung College of Agriculture in Taiwan.

Olen C. Yoder, Ph.D. 1971, is Professor of Plant Pathology at Cornell and a leading researcher in his field.

Roger Beacher, Ph.D. 1972, is a Professor at Washington University and a leader in molecular biology studies.

REFLECTIONS

We have summarized the development of our department from its early beginnings in 1857 up to the present time. From one faculty member to forty \pm ; from less than 100 students in botany classes each term to approximately 900 are quantum jumps.

Our faculty members have had better training and have the use of superior equipment than did their predecessors. I wonder what the botanists of the year 2050 will think of our efforts? Kindly, I hope.

Botany was first taught in College Hall on the area now occupied by the Beaumont Tower. Many years were spent in the old Botany Building on Circle Drive but a tremendous improvement followed our move to the Natural Science Building. Now we occupy comparatively luxurious accommodations in the Plant Biology Building.

The age of computers has now ^adowned and its influence has spread to all areas of botany. Immense amounts of time are saved; valid conclusions can be reached almost instantaneously, provided the data fed into the computer, by the human brain, ^{are} ~~is~~ accurate. The world of molecular genetics holds immense promise for us not only in basic research but also in the improvement of plants of many kinds.

Botany and plant pathology are truly entering an exciting era. We are part of the advance force. The end of research using modern machines and concepts is, however, not in sight. The world's problems seem to increase rather than decrease and we now have more questions than we have answers.

OTHER BEGINNINGS

- 1870 First women enrolled.**
- 1876 First Farmers Institute.**
- 1887 Federal Hatch Act provided for an Agricultural Experiment Station in each state.**
- 1888 Agricultural Experiment Station established at MSC.**
- 1890 Second Morrill Act passed and funds were appropriated for a more complete endowment and maintenance of Agricultural Colleges.**
- 1909 Farm Crops Department established; name changed to Crop Science Department 1963.**
- 1909 Soils Department established; name changed to Soil Science Department 1945.**
- 1914 Federal Smith-Lever Act created the Cooperative Extension Service.**
- 1915 Michigan Public Act No. 65 accepted the benefits of the Smith-Lever Act.**
- 1960 Biochemistry Department formed by a fusion of Agricultural Chemistry in the College of Agriculture and a division of Chemistry in the College of Natural Science. It currently functions with input from both colleges.**
- 1969 Crop Science and Soil Science Departments merged.**

DEPARTMENT OF BOTANY AND PLANT PATHOLOGY

FACULTY MEMBERS - 1859-1988

From Instructors Up

1859 --- Henry Goadby 1859-1860

1860 --- George Thurber 1860-1863

1863 --- Albert Nelson Prentiss 1863-1869

1870 --- William J. Beal 1870-1919

1879 --- Henry Edward Owen 1879-1881

1887 --- Edwin Ralph Lake 1887-1888

1889 --- Clare Bailey Waldron 1889-1890

 Lyster Hoxie Dewey 1889-1890

1890 --- James Wm. Toumey 1890-1891

 Charles Fay Wheeler 1890-1902

1891 --- Gilbert Henry Hicks 1891-1894

1894 --- Burton Orange Longyear 1894-1904

1902 --- James Brown Dandeno 1902-1910

1904 --- Ellen B. Bach 1904-1906

1906 --- William E. Lawrence 1906-1909

1908 --- Rose Marguarite Taylor 1908-1909

1909 --- Richard de Zeeuw 1909-1945

 Margaret Dupee 1909-1910

1910 --- Anna Bell Lee 1910

 Ruth Florence Allen 1910-1924

 Ernst Athearn Bessey 1910-1945

 George Herbert Coons 1910-1929

 Bertha E. Thompson 1910-1925

1911 --- Rufus Percival Hibbard 1911-1940
 1913 --- Jesse Howard Muncie 1913-1917; 1927-1954
 1914 --- Henry T. Darlington 1914-1945
 Edward Fred Woodcock 1914-1950
 1916 --- Harry Curtis Young 1916-1922
 1918 --- Edward Jacob Petry 1918-1920
 Ray Nelson 1918-1967
 Carlyle Wilson Bennett 1918-1928
 1920 --- John Kotila 1920-1930
 Bertha A. Hollister 1920-1922
 1922 --- Leslie A. Kenoyer 1922-1923
 1925 --- Forrest Cook Strong 1925-1962
 Harry Frank Clements 1925-1928
 1926 --- Henry L.H. Chapman 1926-1951
 1928 --- Orman Ellery Street 1928-1929
 H.H. Wedgewood 1928-1929
 1929 --- Herbert C. Beeskow 1929-1969
 Eugene S. McDonough 1929-1930
 1931 --- Donald Cation 1931-1968
 1935 --- Buford Horace Grigsby 1935-1962
 H.C. Abbott 1935-1939
 1937 --- Harold F. Spencer 1937-1938
 Horace Leslie Barnett 1937-1938; 1939-1940
 Ralph William Lewis 1937-1944
 1938 --- Earl Holland Newcomer 1938-1941
 1939 --- Axel Andersen 1939-1977

1940 --- Miriam Carpenter Strong 1940-1962
 1941 --- Carl Pontius Swanson 1941-1943
 1943 --- Darrell Marshall McLean 1943-1946
 1945 --- William B. Drew 1945-1976
 F. Lyle Wynd 1945-1954
 Hugh G. Gauch 1945-1946
 Louis Carl Knorr 1945-1948; 1971-1974
 Charles W. Barr 1945-1948
 1946 --- Gerald VanWebber Prescott 1946-1968
 Jack Calkins Elliott 1946-1969
 Robert James Lowry 1946-1948
 Elsbeth Isabe Delderfield 1946-1948
 1947 --- George Peter Steinbauer 1947-1961
 Constantine John Alexopolous 1947-1956
 Parley Wallace Dennis 1947-1952
 John Raymond Vaughn 1947-1953
 1948 --- Everett S. Beneke 1948-1988
 Edward Arnold Andrews 1948-1955
 Donald John DeZeeuw 1948-1976
 Charles Louis Gilly 1948-1954
 1949 --- G. Bernard Wilson 1949-1968
 Thomas T. McClure 1949-1952
 1950 --- Leo Willis Mericle 1950-1982
 1951 --- Robert Harry Fulton 1951-1959

1952 --- George Parmelee 1952-1986
 Lloyd Glen Wilson 1952-1985
 Richard Lorin Kiesling 1952-1960
 1953 --- Robert Paul Scheffer 1953-1988
 Nicky A. Smith 1953-1978
 Evelyn A. Horenstein 1953-1965
 1954 --- Robert Stanley Bandurski 1949; 1954-
 Edward J. Klos 1954-
 Quentin Jones 1954-1956
 John Edward Cantlon 1954-1969
 TeMay Tson Ching 1954-1956
 1955 --- John LeBaron Lockwood 1955-
 William James Hooker 1955-1979
 Theodore Delevoryas 1955-1956
 William Vinyard 1955-1956
 1956 --- Edward C. Cantino 1956-1983
 John Homer Beaman 1956-
 Henry A. Imshaug 1956-
 Harry H. Murakishi 1956-1988
 Howard Spencer Potter 1956-1984
 George W. Gillett 1956-1962
 1957 --- John H. Morrison 1957-1959
 Alex Kivilaan 1957-1977
 Joseph A. Stevens 1957-1961
 1959 --- Ervin Henry Barnes 1959-1967
 Irving W. Knobloch 1959-1976

1960 --- Albert Harian Ellingboe 1960-1982
 1961 --- Aureal Cross 1961-1986
 1962 --- Norman F. Good 1962-1986
 Clifford Julius Pollard 1962-1988
 1963 --- John Henderson Hart 1963-
 David Louis Mumford 1963-1967
 1964 --- Akira Yamaguchi 1964-1965
 Joseph Mochaitis 1964-1976
 Cheruvathur Chacko 1964-1966
 Seikichi Izawa 1964-1966; 1968-1971
 Edgar J.C. Curtis 1964-1965
 1965 --- Raymond Hollensen 1965-
 Hans Kende 1965-
 Melvyn L. Lacy 1965-
 Stephen Neil Stephenson 1965-
 Alvin Rogers 1965-
 Prem M. Pandhi 1965-1966
 Anton Lang 1965-1983
 Robert George Wetzel 1965-1986
 C. Peter Wolk 1965-
 Jan A.D. Zeevaart 1965-
 1966 --- Charles L. Schneider 1966-1983
 Arthur Allen 1966-1968
 Michael Jost 1966-1977

1967 --- Alfred W. Saettler 1967-
 Klaus Raschke 1967-1979
 William Grady Fields 1967-1975
 1968 --- Alan L. Jones 1968-
 Joseph Vargas, Jr. 1968-
 Brian Moss 1968-1971
 Gerald Ray Hooper 1968-1971; 1973-1980
 1969 --- William Tai 1969-1982
 Maurice Victor Wiese 1969-1978
 Charles W. Laughlin 1969-1980
 1970 --- Peter G. Murphy 1970-
 Kenneth D. Nadler 1970-
 1971 --- Clyde L. Burton 1971-
 Ralph E. Taggart 1971-
 1972 --- Frank Laemmln 1972-1980
 Donald C. Ramsdell 1972-
 Gene Robert Safir 1972-
 1973 --- George William Bird 1973-
 Patricia Ann Werner 1973-1985
 Richard E. Stuckey 1973-1975
 1975 --- Kenneth L. Poff 1974-
 Fred Tschirley 1974-1984
 George Scott Ayers 1974-
 1976 --- Wayne H. Weidlich 1976-1982

Laemmler

1978 --- Lynn Patrick Hart 1978-
Christine Taylor Stephens 1978-
Winston C. Fulton 1978-1980
1979 --- Dennis W. Fulbright 1979-
1980 --- Raymond Hammerschmidt 1980-
1981 --- Karen Klomparens neé Baker 1981-
1982 --- Christopher Somerville 1982-
1983 --- Barbara B. Sears 1983-
1984 --- Frank W. Ewers 1984-
Gerard C. Adams 1984-
1985 --- David L. Roberts 1985-
1986 --- Natasha Raikhel 1986-
Shauna Somerville 1986-
Stephen Tonsor 1986-
1987 --- John H. Halloin 1987-
John B. Ohlrogge 1987-
Jonathan Walton 1987-
1988 --- Susan Kalisz 1988-
Gerard Donnelly 1988-

STAFF ROSTER

The following persons are an integral and important part of our department and we acknowledge their contributions on this page.

OFFICE STAFF

Beth Carpenter

Dawn Chamberlin

Dawn Kirby

Jill Pendergrass

Phyllis Robertson

Barbara Trierweiler

Betti Weiss

Wendy Whitford

Frances Work

SPECIALISTS

Neta Holland

Sheila Linderman

David L. Roberts

Heidi von Wettstein

RESEARCH ASSOCIATES

James Battey

Mark Derosiers

Marcia Murry-Ewers

Richard Glick

Stanley Kowalczyk

Martha Post-Beittenmiller

Katherine M. Schmid

Margaret Smither

Andrea Squartini

RESEARCH ASSISTANTS

Joseph L. Clayton

Kristine Kovach

Alvin Ravenscroft

Thomas Trana

Cara Wallace

TECHNICIANS

Michael Aerts

Therese Best

Rick Comstock

Richard A. Crum

Ronald Detweiler

Gail Ehret

Jeri Gillett

Aga Schulze

Tom Stebbins

Tracy Wacker

L. Cliff Zehr

BOTANICAL PREPARATOR

Romayne Volk

LABORATORY PREPARATOR

Nancy Veenstra

REFERENCES CONSULTED

- ABBOT, T.C. 1882. The earlier history of the Michigan State Agricultural College up to its re-organization in 1861. In First Biennial Report of the Secretary of the State Board of Agriculture of the State of Michigan from September 1, 1880 to September 30, 1882.
- ANDERSEN, AXEL, L. 1976. History of Plant Pathology at Michigan State University. Chronology of the North Central Division of the American Phytopathological Society.
- ANONYMOUS 1911. Michigan Agricultural College-Catalogue of Officers and Graduates, 1857-1911. East Lansing, Michigan.
- ANONYMOUS - College and University catalogues in the archives - 1857-present.
- BAKER, RAY STANNARD and JESSIE BEAL BAKER 1925. An American Pioneer in Science. Amherst, MA.
- BEAL, WILLIAM J. 1915. History of the Michigan Agricultural College and Biographical Sketches of Trustees and Professors. Lansing, MI. Hallenbeck & Crawford Co.
- BLAIR, LYLE and MADISON KUHN 1955. A short history of Michigan State, East Lansing. The Michigan State University Press.
- CATTELL, JAQUES, Ed. American Men of Science (var. eds). Science Press.
- DREW, WILLIAM B. 1980. A history of botany and plant pathology at Michigan State University from 1943 to 1973. Mimeo.
- KIVILAAN, A. and ROBERT S. BANDURSKI 1981. The one hundred-year period for Dr. Beal's seed viability experiment. Amer. Journ. Bot. 68:1290-1292.
- KUHN, MADISON 1955. Michigan State, the first hundred years, 1855-1955. East Lansing. The Michigan State University Press.

LAUTNER, HAROLD W. 1977-1978. From an oak opening, a record of the development of the campus park of Michigan State University, 1855-1969. 2 Vol., Mimeo.

THOMAS, DAVID 1984. "Keep on Squintin", the life of William James Beal. Michigan History. July-August, pp 16-23.

APPENDICES

1. Henry Goadby

✓ "Resolved that Henry ^Goadby, M.D. of Detroit be appointed to the Chair of Entomology and Comparative Anatomy and Physiology in the Agricultural College." Records of the State Board of Education Concerning the Agricultural College, March 14, 1857.

"Voted that Dr. H. Goadby be employed to lecture at the Agricultural College for 8 weeks during this year at a salary of \$250.00 (?) for that time and that Mr. Baxter be instructed to communicate with Dr. Goadby and the faculty, to arrange for his services to be rendered at such time as may be most convenient to himself and advantageous to the college". idem April 6, 1859.

2. D.P. Mayhew

"Resolved that D.P. Mayhew be appointed to the Department of Natural and Experimental Science in the Agricultural School provided he will consent to vacate his present position at the Normal School though the Board will not urge this change." idem March 14, 1857.

3. William J. Beal

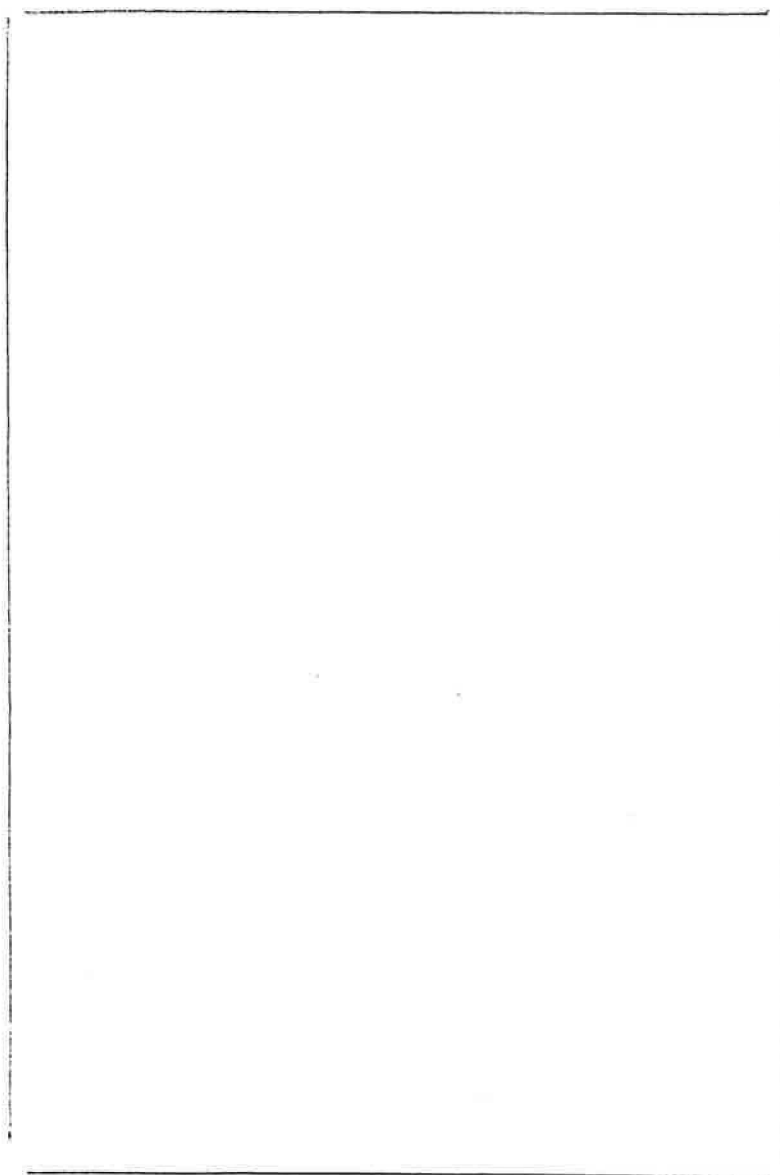
Beal is buried in section B, lot 213, grave 1 and his wife, Hannag lies in grave 2 next to him. Memo from the Lansing, Parks and Recreation, Cemetery Division, Mt. Hope Cemetery, postmarked March 19, 1985.

This Beal is in same plot

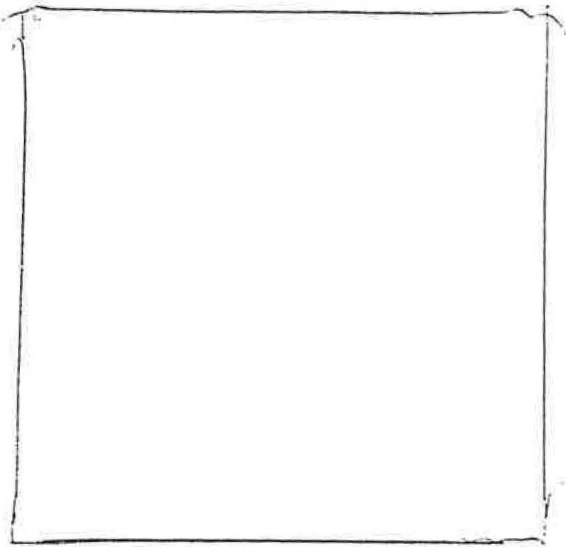
Cemetery

4. Botany Department

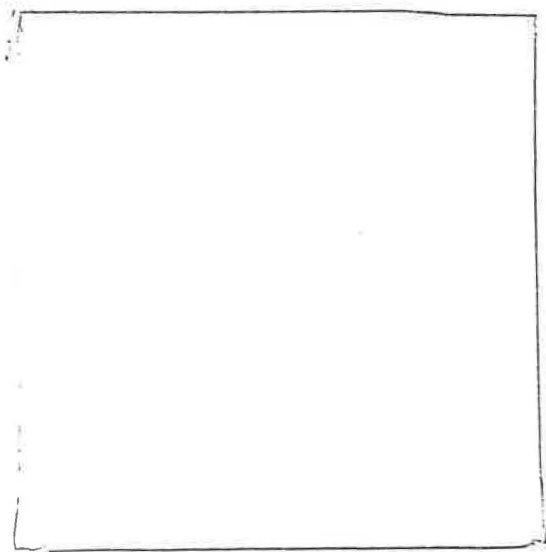
"Request that name of Botany Department be changed from the Department of Botany to Department of Botany and Plant Pathology. Approved by Administrative Group and Faculty January 26, 1932. On motion of Mr. Brody it was voted to approve the above request." Minutes of the Meeting of the State Board of Agriculture, February 18, 1932.



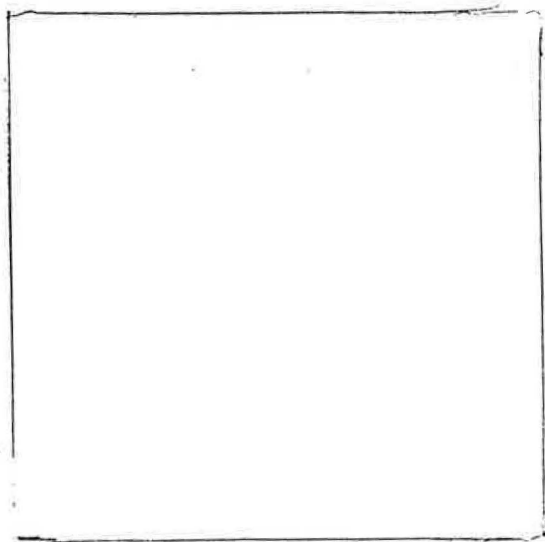
William J. Beal



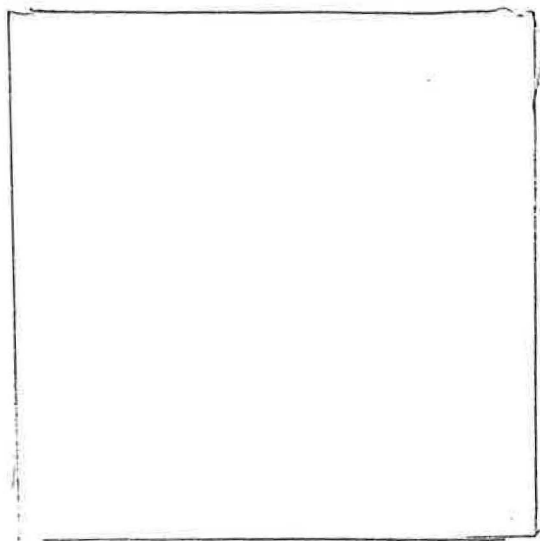
George Thurber



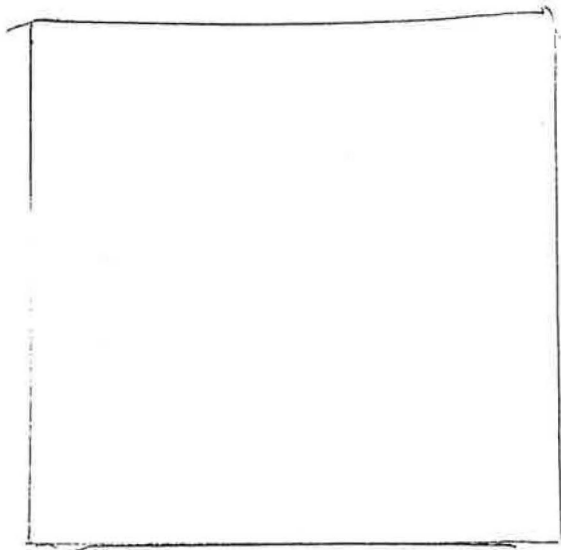
Albert Prentiss



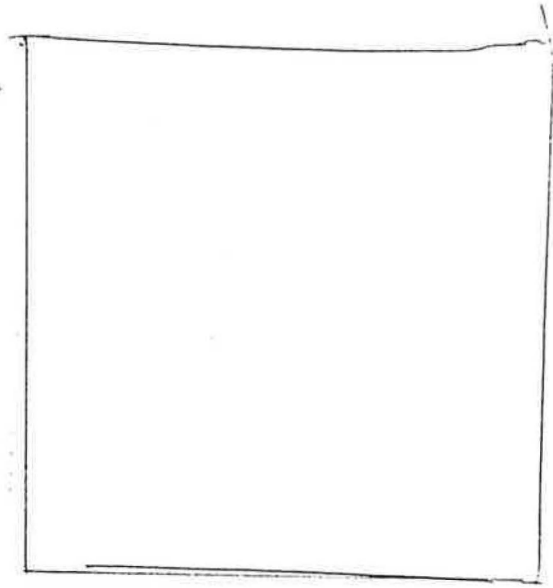
Ernst Bessey



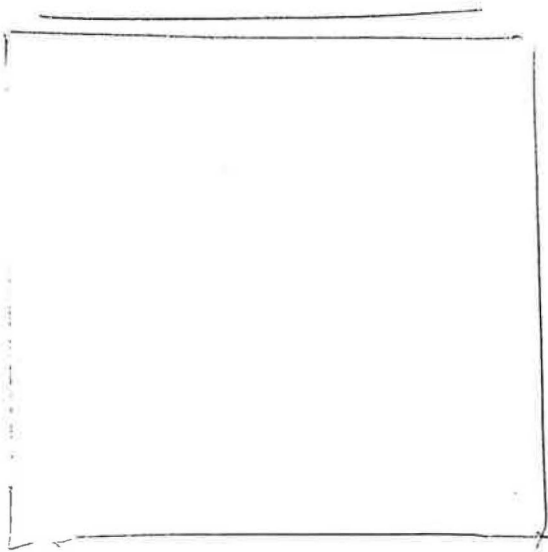
Herbert Hyde Bailey



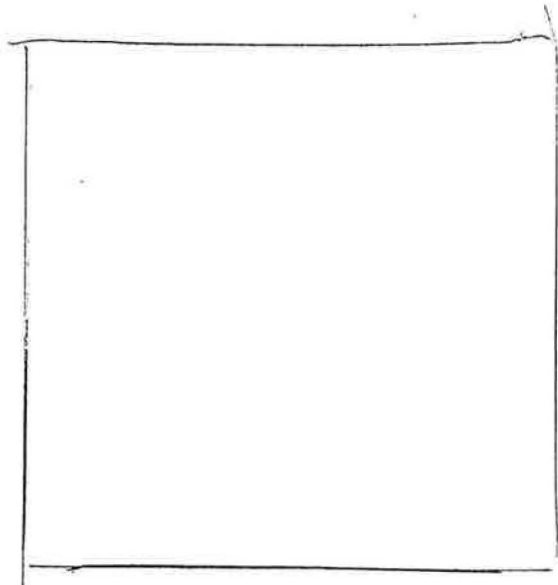
F. Hyle Wynd



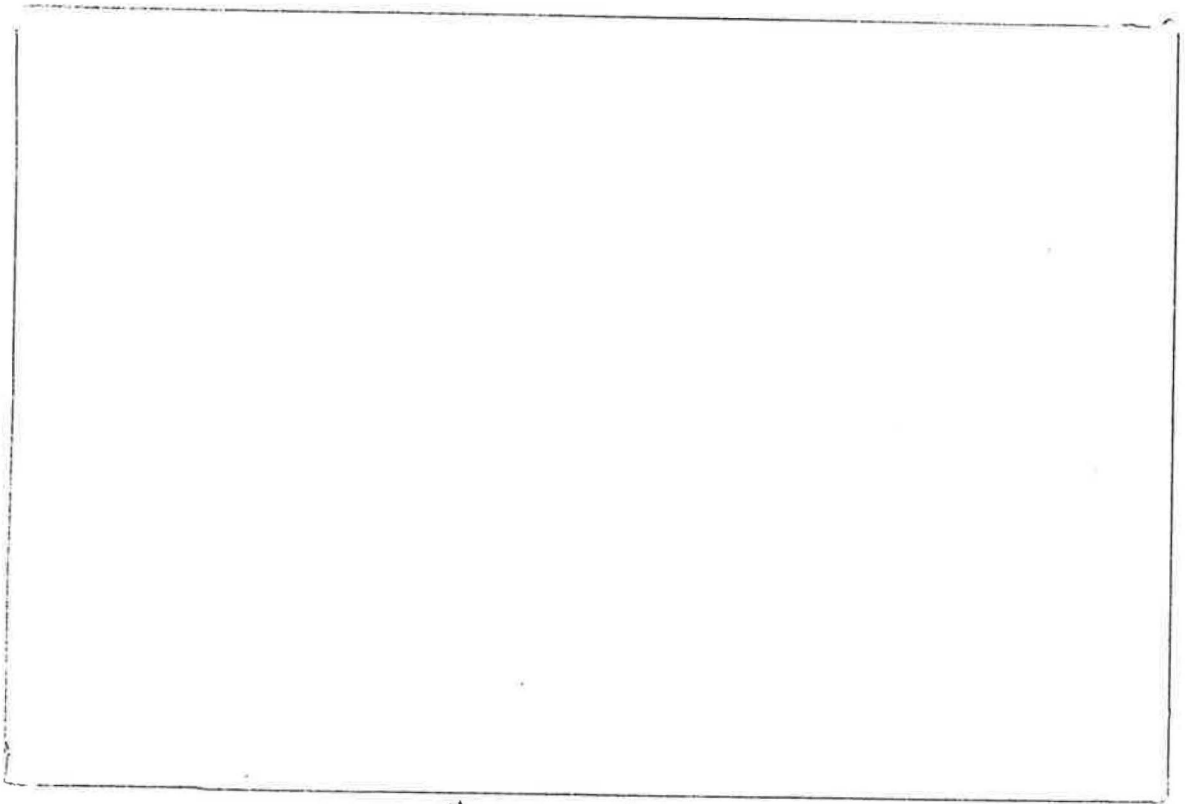
William B. Drew



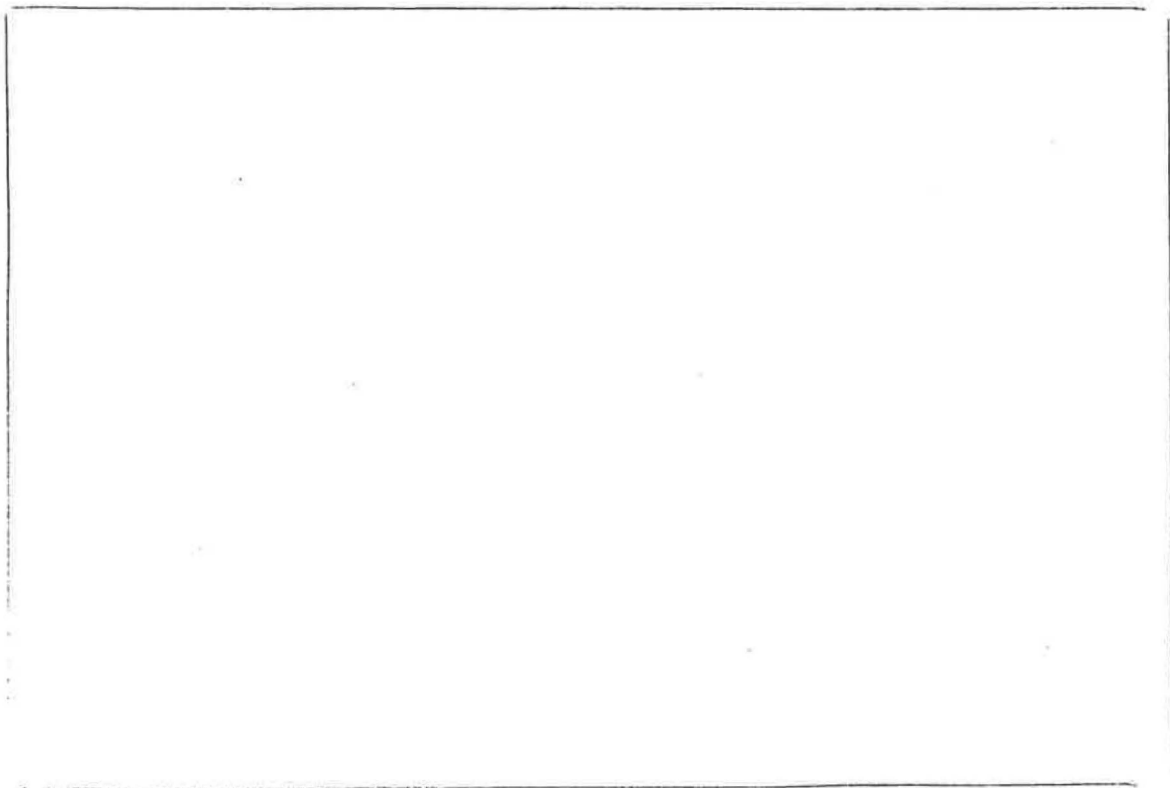
Fred Tschirley



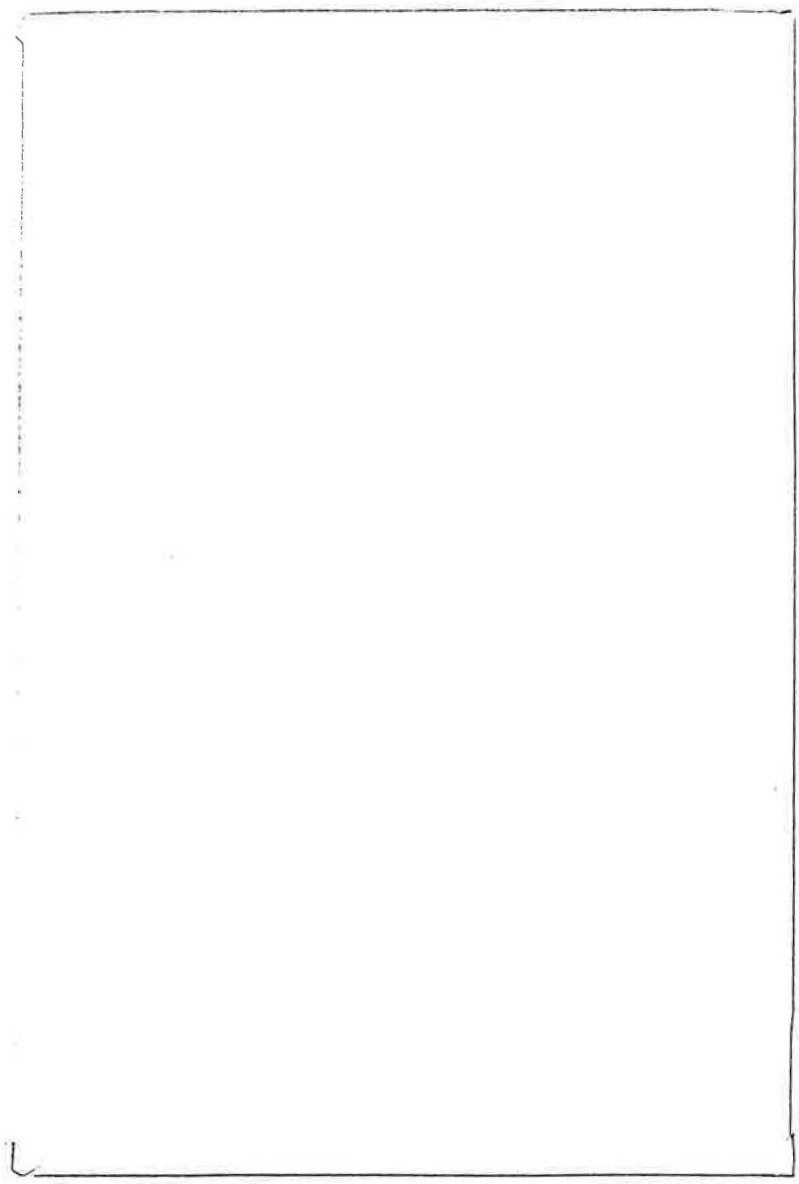
Edward J. Klos



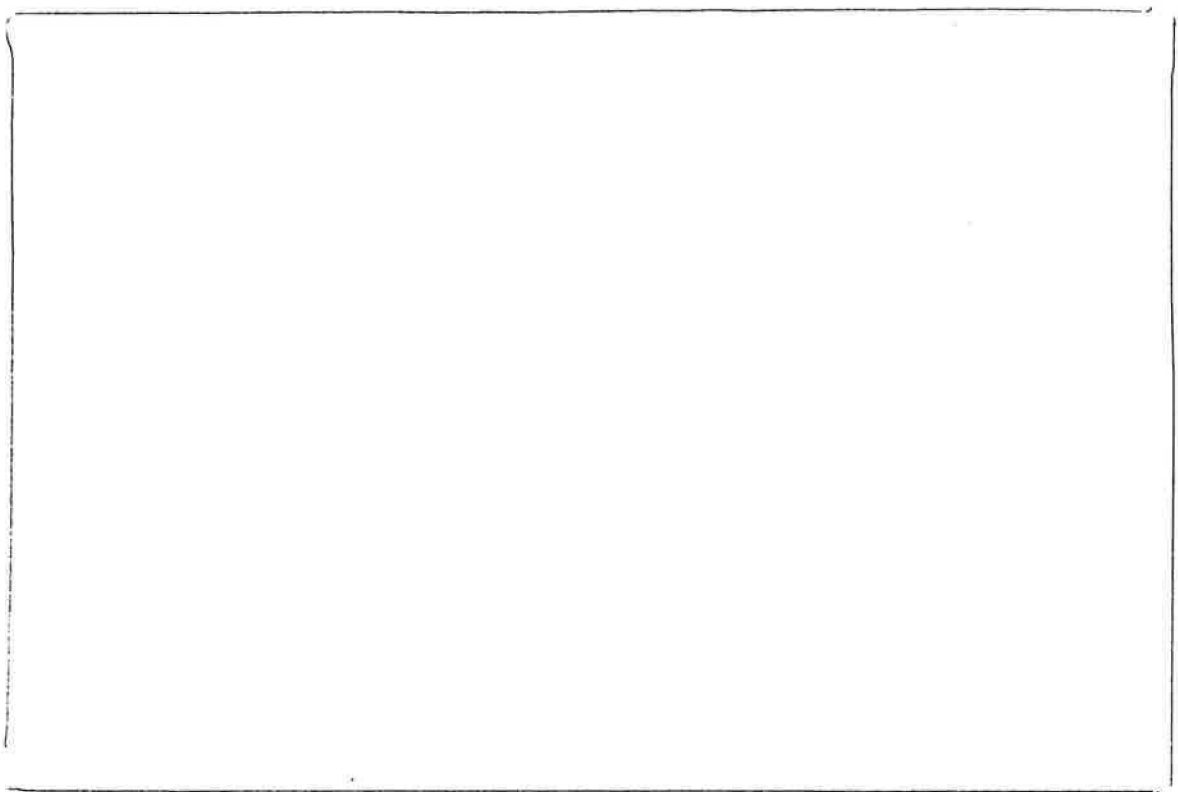
College Hall



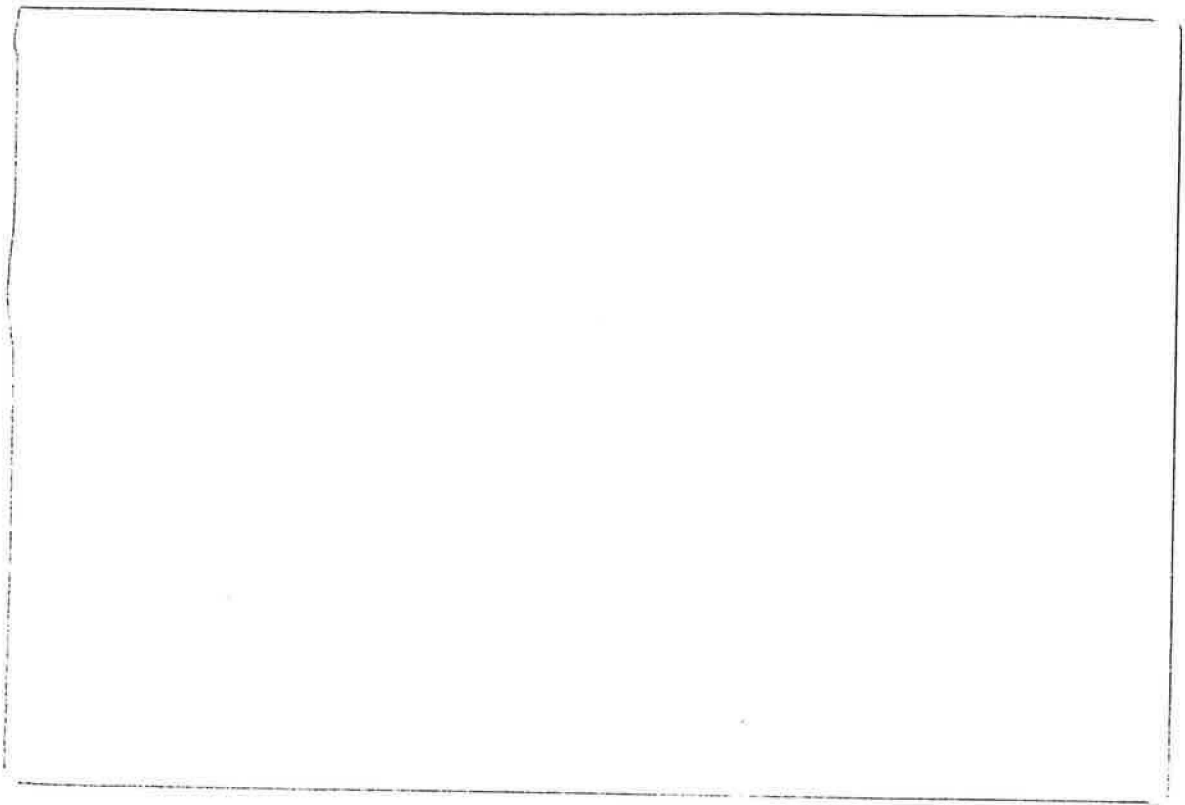
SAINT'S REST



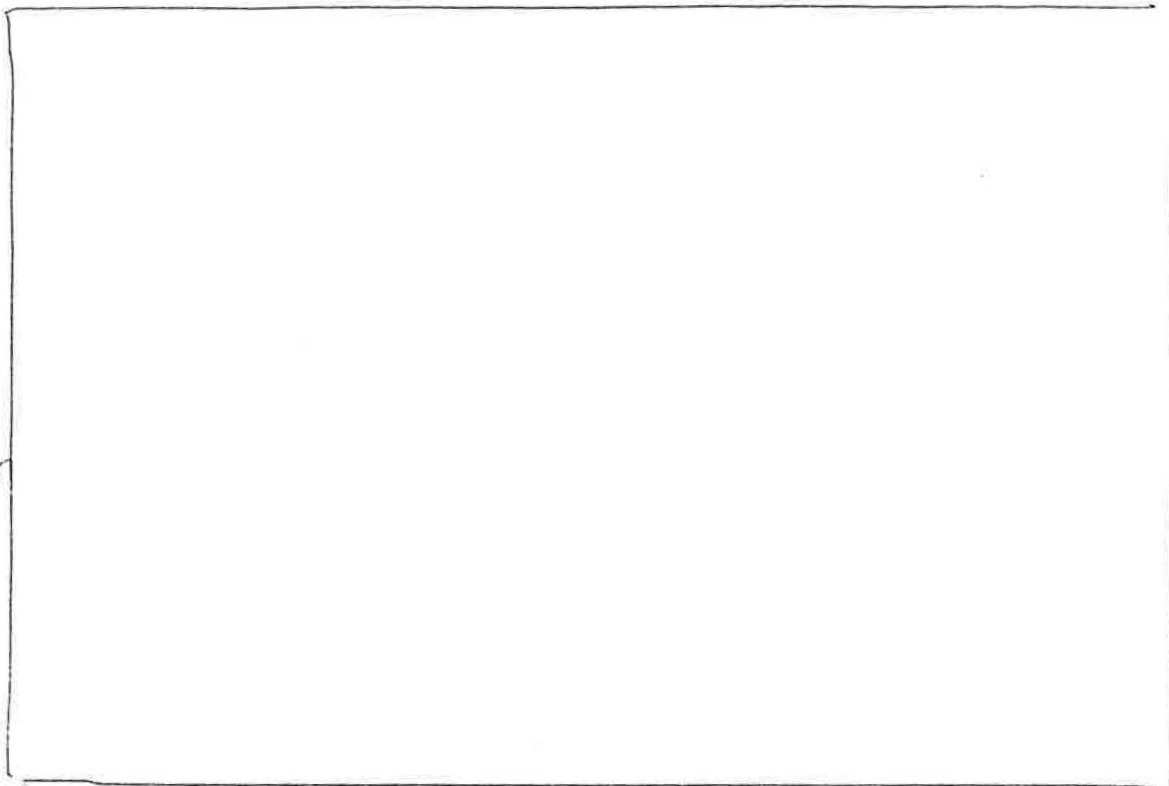
Botany Building - Circle Drive



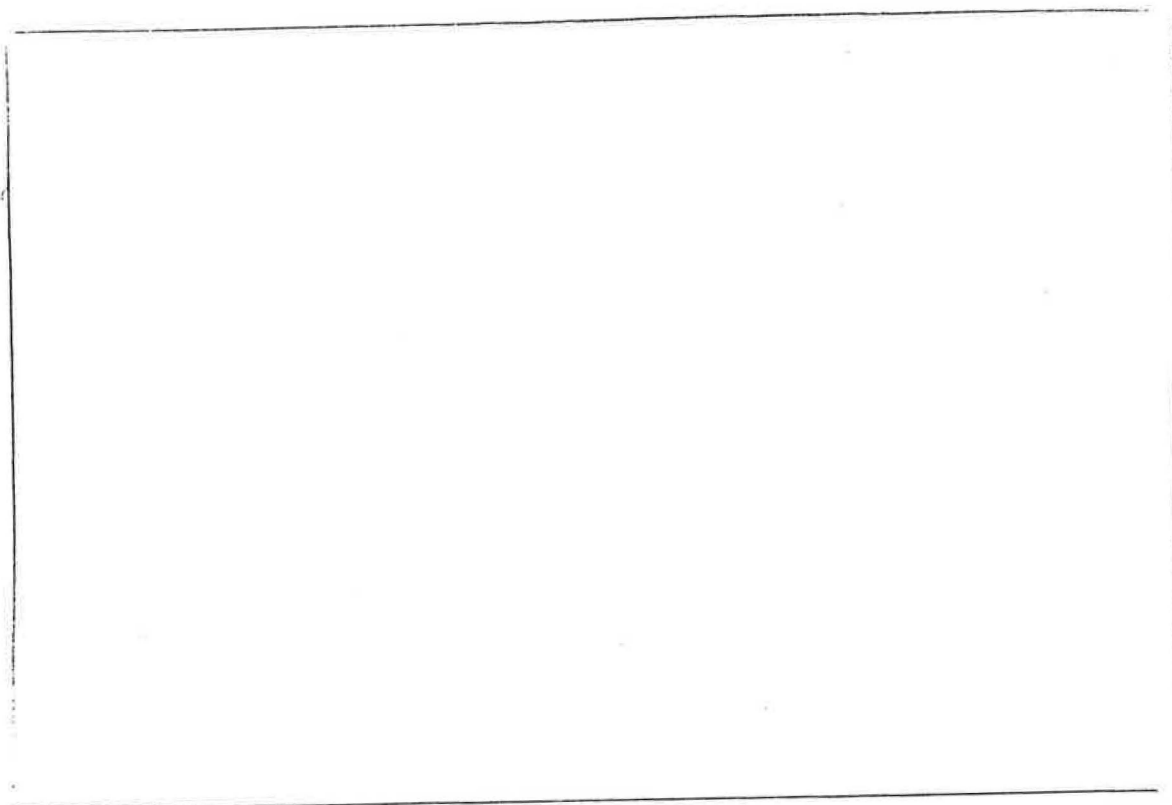
Botany Class - 18 -



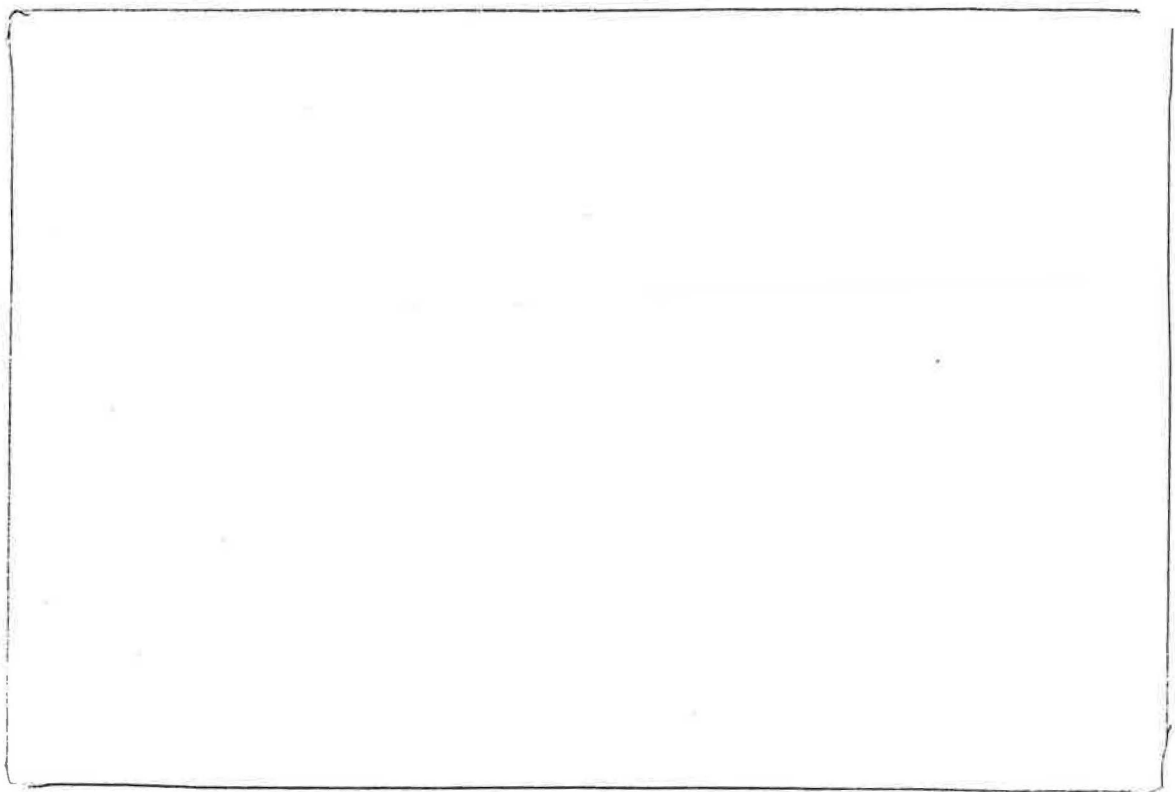
Botany Class 18 -



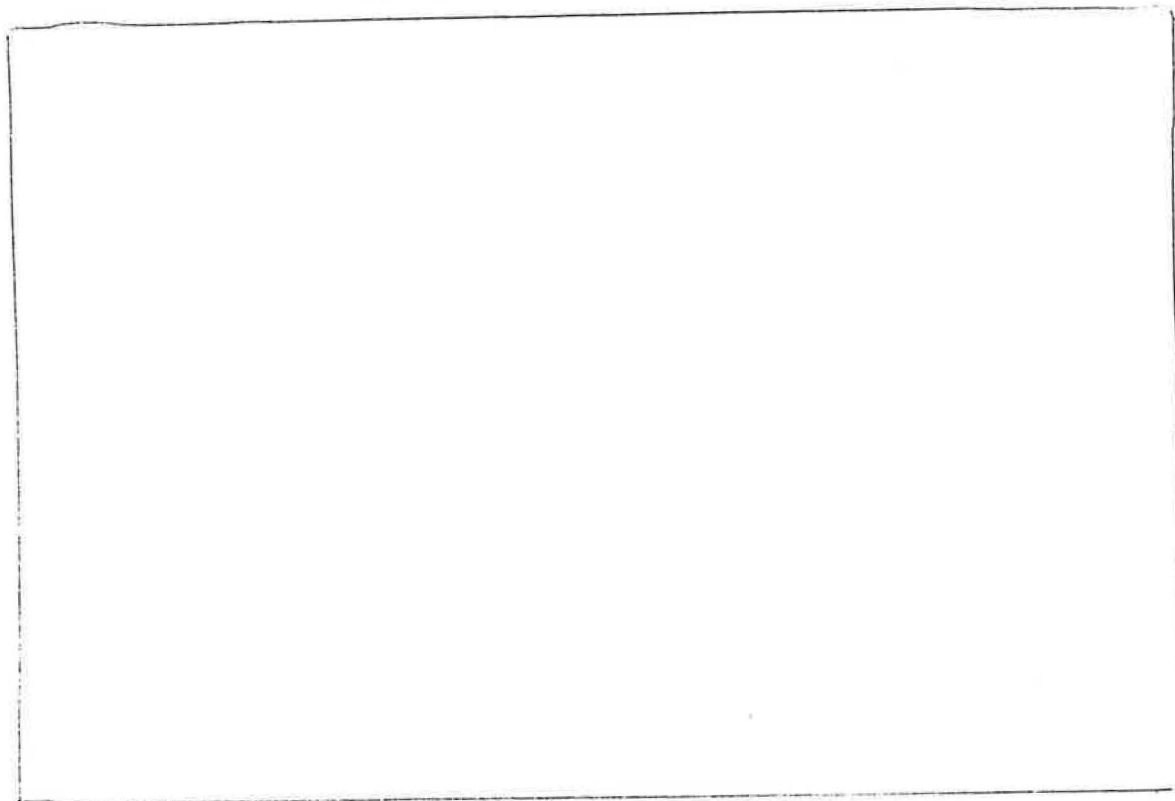
Botany laboratory 18—



Botany laboratory 198—



Natural Science Building



Plant Biology Building

Early
Drafts

Frank Pennes

APR 25 1985

52
④

I turned in a short draft of
our history, to this will be added
whatever the staff wants added
mainly any major breakthrough they have
accomplished. Read this over & make
corrections esp. on Tracy; where
does he come in? over

MICHIGAN STATE UNIVERSITY

BY

IRVING W. KNOBLOCH, PH.D.

PROFESSOR EMERITUS

WITH THE COOPERATION OF

DRS. WILLIAM DREW, AXEL ANDERSEN, JOHN BEAMAN AND GEORGE PARMELEE

198_

Not to be copied or published without the consent of the editor,

Dr. I.W. Knobloch.

sent critique 5/2/85

Point 2 - there will be a number of
photos.

Point 3 - Mr. Herbert at the archives
told me today, one can go there,
pick out photos wanted, give them
an acct no + they will have them
printed up.

Point 4 - University Publications 4147 Berkeley
355 3292 with acct your "thing" and
my "thing" for a small fee

52
④

A CONDENSED HISTORY OF THE
DEPARTMENT OF BOTANY AND PLANT PATHOLOGY
AT
MICHIGAN STATE UNIVERSITY
BY
IRVING W. KNOBLOCH, PH.D.
PROFESSOR EMERITUS
WITH THE COOPERATION OF
DRS. WILLIAM DREW, AXEL ANDERSEN, JOHN BEAMAN AND GEORGE PARMELEE

198_

Not to be copied or published without the consent of the editor,
Dr. I.W. Knobloch.

Sent critique 5/2/85

THE EARLY YEARS

The story of the College (now University), its Departments and Faculty is an exceedingly interesting, and sometimes complicated saga. To develop this theme, it was necessary to comb several books and hundreds of records.* What follows, then, is but a very condensed version which will capture not only the sequence of events as they happened but also the spirit of the development of the institution and, particularly, of the Department of Botany and Plant Pathology.

Michigan was admitted to the Union in 1837, the same year that the University of Michigan came into being. In 1849, a State Agricultural Society was formed and, in the very next year, they petitioned the legislature to authorize the formation of a college to meet the needs of the predominantly rural population. Mr. John Clough Holmes was the energetic Secretary of the Society and, using his influence, finally persuaded the legislature and the Governor to establish, on February 12, 1855, the "Agricultural College of Michigan". The State Board of Education was then authorized to implement the law and soon about 677 acres of almost virgin forest were purchased. The clearing of only a part of this tract was a herculean task indeed but soon three poorly-constructed buildings emerged, a dormitory named Saint's Rest, a barn and College Hall which was a classroom and laboratory structure.

Before opening the College, a Faculty had to be assembled and this was done in 1857. The first catalogue, in 1857, listed these as Joseph R. Williams, President, Calvin Tracy, Professor of Mathematics, Lewis R. Fisk,

* A list of sources used in compilation of this history is to be found in the Appendix.

Professor of Chemistry, Robert Weeks, Professor of English Literature, John C. Holmes, Professor of Horticulture and Treasurer (who did not teach but maintained the grounds and helped students in their outside work-ed.), Henry Goadby, Professor of Animal and Vegetable Physiology and Entomology (who did not start teaching until 1859 and then only for a short time due to poor health-ed.), David P. Mayhew (Mayhew resigned in 1857 because of a previous committment-ed.), and Enoch Bancker, assistant in Chemistry.

There were about 63 students in attendance on May 13, 1857 according to Blair and Kuhn; ^{Today} ~~[In recent years, it is not uncommon to find]~~ ^{attend} over 40,000 in class. ^{it} ~~Today, the campus is well-manicured, but in 1857, one found nothing but~~ ^{Then the campus consisted only of} giant trees and many swamps; In fact, some considered the site both unsuitable and unhealthy. Malaria was common and in 1859, all of the students and one of the Professors came down with the then - poorly-understood disease. For quite ^{for many years} ~~a few years~~, the college experienced financial woes and some feared it would not survive.

^{Out of context} According to President Abbot's 1881-1882 Annual Report, the Department of Horticulture was authorized in 1882, with its opening proposed for January 1, 1883 under the direction of a 1869 graduate ^{where was Botany?} ~~named James Satterlee~~, Liberty Hyde Bailey, also a local graduate and student of Dr. Beal, took over in 1885 and did outstanding work until 1888 when he left for Cornell University. Forestry became an independent entity in 1902. In 1933, our Department came to be known as the Department of Botany and Plant Pathology. Another interesting sidelight is the fact that the very first Ph.D. granted by the College was that given to a botany student named Edward J. Petry.

As indicated earlier, no botanical work was offered until Dr. Goadby could take office in 1859. He came here from the Royal College of Surgeons in London and was the author of a widely-acclaimed textbook, "A textbook of vegetable and

animal physiology". President Abbot took over some of his duties for a time when he resigned (Kuhn p. 58). In 1860, Dr. George Thurber, another medical doctor was appointed, a friend of famous botanists and member of the United States-Mexican Boundary Survey of 1850. He was well-received but left in 1863 to seek a more wholesome professional and financial climate. "I am starving here", he is reported to have said.

Albert Nelson Prentiss entered MAC in 1858 and studied his botany under Drs. Thurber and Goadby, graduating in 1861 with a B.S. degree among a class of seven, the first graduating college from the College. He was an instructor from 1863 to 1864, receiving his M.A. degree in 1864. He taught the botanical subjects (when Dr. Thurber resigned in 1863) until 1869 when he left for a more promising career at Cornell University. He turned out many famous botanists, both here and at Cornell.

In 1870, the famous William James Beal appeared upon the local scene. Volumes could be written upon this man's accomplishments (in fact one such volume has already appeared). Our treatment will be, of necessity brief because we have almost 100 more years of history to record. His own account is given in his 1915 book (see appendix) but a great deal of other data can be found in his 1910 report to the State Board of Agriculture where his 40 years of work is detailed. Dr. Beal was born in Adrian, Michigan, the 11th of March, 1833 and he died in Amherst, Massachusetts the 12th of May 1924. He lies next to his wife, Hannah, in Mt. Hope Cemetery, Lansing, Michigan.

A few of the highlights of his career, not necessarily in chronological order follow: Professor and lecturer in numerous schools prior to 1870; first President of the Michigan Academy of Science; Secretary of the American Pomological Society; originator of a grass garden, a botanical garden, an arboretum, a weed garden, and a botanical museum; he wrote about 17 books and

bulletins and many scientific articles; laid out some of the first roads and walks on our campus; planted and tended many trees and shrubs including the famous "Pinetum"; started ~~at~~ MAC the first seed-testing laboratory in the United States; initiated in 1879, what was probably the first long-term longevity experiment in history, a study which is only now coming to a close (the winner, by a ^{long shot} hair, is Verbascum blattaria); and lastly, ^{it should be noted that,} in 1877, he performed important experiments on the corn plant demonstrating that when two varieties are forced to cross-pollinate, the yield was increased by a considerable percentage. Drs. Davenport, Holden and Shull, following his lead, produced homozygous lines which, in turn, led to modern hybrid corn.

Approximately 123 faculty members have served our Department from 1857 to the 1980's and this does not include the newer members now serving. In 1984, there were 58 Faculty and Associates plus many staff and graduate students. Botanical spin-offs are now taught by large staffs in Horticulture, Forestry and Crops and Soil Science [Departments].

Dr. Beal did have some help with his teaching during his 40 years of service. These were Ellen Bach, James Brown Dandeno, Lyster H. Dewey, Margaret B. Dupee, Gilbert H. Hicks, Edwin R. Lake, William E. Lawrence, B. O. Longyear, Albert W. Prentiss, Rose M. Taylor, Clare B. Waldron and Charles F. Wheeler. Albert Prentiss has been mentioned before. Charles F. Wheeler reported on diseases caused by fungi such as black knot, apple scab, celery leaf blight, corn smut and others. Burton O. Longyear, famous after he left here, worked on potato blight and taught courses in plant pathology.

Dr. Ernst Bessey took Dr. Beal's place in 1910 and had a long tenure. His father was the ~~knowned~~ Dr. Charles Bessey, a former student here and an important scientist at both Iowa State University (then College) and at the University of Nebraska. A few milestones in Ernst Bessey's career were

1897 - B.Sc. Univ. Nebraska;

summarized by Dr. Beeskow: 1896 - A.B., Univ. Nebraska; 1899 - M.A., Univ. Nebraska; 1899-1908 - studied in Europe and collected in Russia, Turkestan and Algeria for the U.S.D.A.; 1904 - Ph.D. from Univ. Halle, Germany; 1908-1910 - Professor Botany, Louisiana State University; 1910-1945 - Professor and Head Botany, Michigan State College (and University); 1927-1934 - Acting Dean and later Dean, Division of Applied Science and Graduate School plus regular Department Head duties; 1939-1940 - Visiting Professor, Univ. Hawaii; 1950- published "Morphology and Taxonomy of the fungi"; 1956- recognized as one of the 50 outstanding botanists of his time by the Botanical Society of America. Despite his onerous administrative duties, Dr. Bessey did manage to do some research on the orange rust of raspberries and blackberries. He died in E. Lansing the 17th of July 1957 at the age of 80 years.

His staff was never large at any one time nor too well-paid.

Approximately 30 names come to mind who served under him with some overlap to his successor. Ruth Allen was the sponsor of the Ruth Allen award given annually to an outstanding plant pathologist. Her cytological studies on the rusts when she later worked for the U.S.D.A., gained her well-deserved recognition. George Herbert Coons worked with Bessey for nine years before going on to the U.S.D.A. where he became the principal pathologist in charge of sugar beet investigations.

Jesse H. Muncie was a capable investigator on the diseases of potatoes, beans, sugar beets, tomatoes, cucumbers, nursery stock and cereals. He authored or co-authored more than 60 papers on the above plants. Herbert Beeskow successfully taught plant physiology, as well as strange subjects during the war, from 1929 to his retirement in 1969. His engaging personality let students to continue with a career in Botany. ^{Andersen} Axel overlapped Bessey and Drew, receiving his M.A. here in 1941 and his Ph.D. in 1947. In 1939, however,

he worked with the Agricultural Experiment Station and in 1942, he assisted the Department in plant pathology. Some of his work was with the U.S.D.A. and both here and there he was respected for his work on bean and turf diseases, disease management, epidemiology and air pollution.

Donald Cation, ~~from~~ 1931 on, was active in research on many plant diseases such as peach rosette mosaic, cherry yellows virus, necrotic ringspot of cherry, peach yellows, strawberry leaf blight, cherry leaf spot and others and thus gained several awards for his work. Henry T. Darlington was "the" taxonomist for 31 years, being provided with a miserable office and a dank, moldy space for his herbarium. He taught courses every quarter, had charge of the Beal Gardens for a time and was in charge of what was later named- the Beal-Darlington Herbarium. He worked from his retirement on until his death, on "The Mosses of Michigan" which was edited by Howard Crum and placed in his hands as he lay near death.

Richard de Zeeuw started and ended his college teaching career here under both Beal and Bessey, from 1909 to 1945. He taught general Botany, Microtechnique and various strange subjects when the war's veterans came back. Buford H. Grigsby was ^a pioneer in the use of herbicides and plied his expertise not only in Michigan but later in Ceylon, Vietnam, Dacca and Tunisia. Rufus P. Hibbard was the plant physiologist from 1911 until 1930 being succeeded by Drs. Beeskow and later Steinbauer. John E. Kotila labored from 1920 to 1930 and was in charge of potato seed treatment at the Upper Peninsula Experiment Station; he later worked on sugarbeets with ^{the} U.S.D.A.

Others who should be singled out are; Ray Nelson whose classical work on gladiolus, mint, celery, and onion, earned him international fame; Forrest Strong's work on the Dutch Elm disease and his warning that diseased trees should be quickly removed were noted; Miriam Strong's additions to our

Mark a
sentence

knowledge of tomatoe diseases was valuable; and Edward Woodcock for his long tenure as a teacher of Anatomy, Technique, General Botany and Poisonous Plants. He wrote about 31 papers on over 20 genera of plants, especially those known to contain latex, a very important topic at a time when our supply of natural rubber was cut off by the Japanese.

While still en^sconced in the old Botany building on Circle Drive, Dr. F.L. Wynd was appointed Chairman in 1945 to replace Dr. Bessey. His modus operandi did not meet with the approval of some administrators and he was replaced in 1948 by an appointee of his, Dr. William Drew, a Harvard graduate and one trained in taxonomy and ecology. Meanwhile a huge building program was underway under the far-seeing eye of President Hannah. One building to be erected, was to be called the "Natural Science Building" and was to house a number of science Departments including Botany and Plant Pathology. Under Dr. Drew's direction the Department moved piece-meal into this new structure ⁱⁿ during 1948 to 1949. Although it was soon evident that not enough space had been provided for our needs ~~yet~~, it was vastly superior to that in the old Botany building. Meanwhile a new Experimental Biology structure was erected on Wilson Road and Drs. Beneke and Wilson found adequate space therein. Dr. Hooker conducted much of his potato research in a pre-fabricated building called the "Mead Building". In 1963, the Atomic Energy Commission gave its approval for the construction of a fully-staffed and equipped laboratory on Wilson Road for the study of the fundamental Biology of Plants and Dr. Anton Lang, from Cal Tech was chosen as the Director. The new laboratory was completed in July of 1963 and was called the Plant Research Laboratory. Far-sighted Administrative officers, including Dean Byerrum, soon saw that it would be advantageous to have the Botany and Plant Pathology Department placed in close proximity to the PRL building and therefore an application was made to the National Science

Foundation for matching funds for an addition. In early 1965, the proposal was approved and research and teaching facilities were available to our Department by late 1968. Except for the heaviest items, all moving into the new structure was done by department personnel under the direction of Dr. Don deZeeuw and the late Roy Twitchell. Later, the Atomic Energy Commission's functions at the PRL ~~were~~ turned over to the Department of Energy (DOE) and the now-enlarged structure on Wilson Road was named the "Plant Biology Building". Not long afterwards, a large Pesticide Research Center was constructed and lies south of the PBB. East of the PBB and west of the Veterinary Clinic arises a new mammoth building to house the Departments of Horticulture and Crop and Soil Science. In addition, a Molecular Biology unit, attached to the Plant Biology Building, will be completed by the time this report ^{is published} reaches its readers.

According to our former Head, Dr. Drew, the following staff changes occurred from 1945 to 1948. Dr. Hugh Gauch was hired to teach Plant Physiology; Dr. Gerald Prescott, from Albion College, was to teach General Botany, Morphology and ~~Algology~~ ; Dr. C.J. Alexopoulos and Dr. Everett Beneke for Mycology; Parley W. Dennis, as an Instructor; Jack C. Elliot, as Instructor to teach General Botany while studying for the Doctorate here; Dr. John R. Vaughn, from the University of Minnesota as a cereal pathologist; Dr. Donald deZeeuw to research the diseases of the Cucurbits, replacing Dr. Darrell McLean who had resigned; and Dr. Edward Andrews as Extension Plant Pathologist, replacing Dr. Louis C. Knorr who had resigned in 1948.

During this period, we lost our greenhouses which had to make way for the new Library Building. Fortunately, we were able to acquire a large room from the Horticulture greenhouses, a room which we now call our Tropical House. With the move of the Horticulture Department to their new complex on Wilson Road, the fate of their houses and our Tropical House remains unsettled but

hopefully we will not lose our facilities. Mr. John Mugg is our current Greenhouse Manager. Our Experiment Station research field was taken over ~~by~~ ^{to abandon} a soccer field and Dr. Nelson was forced out of his plots by the construction of Hubbard and Fee Halls.

Prior to 1947, Dr. Gauch had resigned and was replaced by Dr. George Steinbauer (who later suffered a mild heard attack). Dr. Robert Bandurski served here during George's recovery period and later was to become a full-fledged member of the staff in 1954. [George died in 1961.] — *why not give all deaths?*

Additional faculty added at the close of the 1940's included Dr. T.T. McClure, in Pathology; Dr. G.L. Gilly, in Taxonomy; Dr. L.W. Mericle to replace Dr. Woodcock who has taught Anatomy and Dr. G.B. Wilson to take over research and teaching in Cytology.

We are mindful of other events on the campus during the fifties such as our National Champion football team in 1952, winning the Rose Bowl game in 1953, the admission of Michigan State to the Big Ten, our Centennial celebration in 1955, and the name change ^{from} of college to University in 1957.

During the first five years of this decade, the following staff were appointed: Dr. Robert Fulton as Small Fruit Pathologist; Dr. R. L. Kiesling, Cereal Pathologist to replace Dr. Vaughn who had resigned for a position at the University of Wyoming; Dr. Edward J. Klos, as a Tree Fruit Pathologist; Dr. Robert P. Scheffer to work on the diseases of ornamental plants and host-parasite relationships and Dr. William J. Hooker to replace the deceased (1954) Dr. J.H. Muncie and to carry on his work on the diseases of potatoes. Dr. Axel Andersen has been mentioned previously.

Other resignations in this period included Drs. McClure, Gilly, Wynd and Mr. P.W. Dennis. Dr. Quentin Jones, a Harvard graduate, replaced the ailing Dr. Gilly in Taxonomy. Dr. John Cantlon, however, was added to develop the

teaching and research program in the field of Ecology. In late 1955, following his return from a sabbatical leave in Greece, Dr. C.J. Alexopoulos resigned to accept a position at the University of Iowa where a magnificent collection of myxomycetes and a large library in this subject awaited him. Later he moved to the growing University of Texas at Austin. To replace him, we were successful in attracting, in 1956, Dr. Edward Cantino from the University of Pennsylvania. His research interest was on the water molds and in this area he became well-known. He also won an award for excellence in teaching while here. He died prematurely, and unfortunately in 1983.

Dr. John Lockwood, a graduate of this Department, with a Ph.D. from Wisconsin, was hired to replace, in part, Dr. Ray Nelson whose failing health led to a disability leave and later retirement. At about this same time, Dr. Harry H. Murakishi, Chairman of Plant Pathology at the University of Hawaii, was appointed to our research staff on ~~v:vegetable~~ diseases. Following the resignation of Dr. E.A. Andrews, Dr. H.S. Potter, with a Doctorate from the University of Maryland, was hired as a full-time Extension Plant Pathologist.

Dr. Theodore Delevoryas came in to teach General Botany and work on his specialty, Paleobotany. Dr. John Beaman, with a Ph.D. from Harvard, came in to replace Dr. Quentin Jones who had resigned to go into government work. Dr. Henry A. Imshaug, a graduate of the University of Michigan, was lured from the University of Idaho to teach General Botany and later Mycology and Lichenology. He is now Curator of the Cryptogamic Herbarium. With increased enrollment, we added Dr. George W. Gillet to teach General Botany and continue his research in taxonomy. Dr. Irving W. Knobloch, was added by transfer from the Department of Natural Science. He was not only an experienced teacher but an international authority on certain groups of ferns, an area which had not been filled here.

Dr. Norman Good came from the University of Western Ontario to work as

plant physiologist for the Experiment Station and Dr. Clifford Pollard was hired to teach advanced courses in Physiology. Dr. Melvyn Lacy came on the scene to specialize in mint research in 1965 and Dr. Joseph Vargas in 1968 to work on turf diseases. Changeovers were numerous such as the resignations of Dr. R. L. Kiesling, who became Chairman of the Department of Plant Pathology at the University of North Dakota, Dr. George Gillett who ~~went~~^{Dr} to Hawaii, and Forrest and Miriam Strong, who both retired. Dr. John Hart replaced Forrest Strong and ^{Dr} Albert H. Ellingboe, came on for cereal research to replace Dr. Kiesling. Dr. Delevoryas left for a more promising position at Yale. Dr. Alex Kivilaan, who had been hired in 1962, retired in 1977. He had, for the first time, isolated pure cell walls and demonstrated that they contained hydolytic enzymes.

A further addition to the staff was Dr. Aurel T. Cross, an established Palaeobotanist and Palynologist from the University of Cincinnati who came as a joint appointee between Botany and Plant Pathology and Geology. In 1965, *back had* another joint appointment was made, this time with the Kellogg-Gull Lake Biological Station in the person of the prominent Ecologist and Limnologist, Dr. Robert G. Wetzel.

Up to 1966, the only Plant Pathologists assigned here by the U.S. Department of Agriculture had been Dr. A.L. Andersen, followed by Dr. David Mumford, on diseases of field beans. In 1966, Dr. Charles W. Schneider joined the Department as a Sugar ^{Beet} Pathologist, followed by Dr. A.W. Saettler in 1967 as a specialist on field beans. Later, in 1971, Dr. Clyde L. Burton, a departmental doctorate, was added by the U.S.D.A. as a specialist in Post-Harvest diseases.

After Dr. E. Bessey's death in 1957, friends and relatives established a fund to reward excellence in graduate study. The first graduate recipient in

1961 was Clifford Wetmore, now a prominent botanist. Later, from the same fund, an undergraduate award was added and the first recipient was Judith A. McKillen. Since those early days, more than 50 young scientists have been honored and one of these was added to our own staff, while others have gone on the fame elsewhere.

Most of our Plant Pathologists worked to a greater or lesser degree with Plant Breeders in Crop Science or Horticulture to develop new lines resistant to a specific disease organism. The testing of the efficacy of fungicides was gradually transferred from the Station staff to our Plant Pathologists.

In 1963, the Department was honored by the election of Drs. Bandurski and Cantlon as recipients of Distinguished Faculty Awards. The next year, Dr. Cantino was similarly honored as has been noted previously. In 1967, Dr. Anton Lang, then Director of the DOE Plant Reserch Laboratory, was the first Faculty member at this institution to be elected to membership in the National Academy of Science. It may be noted that Dr. Edgar Anderson, a graduate from MAC and later a distinguished Botanist at the Missouri Botanical Garden, had been previously been elected to the same body.

Apropos of our last remark, it seem fitting to mention some other prominent MSC and MSU alumni - Eugene Ogden (B.S. 1932) was the former New York State Botanist and still an authority on Potamogeton; John R. Reeder (B.A. 1939) is one of the world's authorities on grasses, especially those in Mexico; Henry J. Oosting (M.S. 1927) is one of the great ecologists of our time; Simon Wolff (B.S. 1926, M.S. 1928) gained prominence at the Texas State Experiment Station and with the U.S. Soil Conservation Service - he ^{also} donated his herbarium of some 5,000 specimens to our herbarium; Ralph A. Giles (M.S. 1941, Ph.D. 1955) was a Professor at Eastern Michigan University; George Parmelee (B. S. 1941, M.S. 1947, Ph.D. 1953) was Acting Curator of the Herbarium from 1952 to

1953, and for many years, he has had charge of the Beal Botanical Gardens and is Curator of Woody Plants; Harold John Lutz (B.S. 1924) dealt essentially with forest ecology in the U.S. Forest Service. The Allegheny Forest Experiment Station, the Connecticut Experiment Station, at Pennsylvania State College and from 1965 to 1968 as Oastler Professor of Forest Ecology at Yale; James William Toumey (B.S. 1889, M.S. 1895) held many positions among which were Morris K. Jessup Professor of Silviculture, Director of the School of Forestry, Dean and Chairman of the Department of Forestry, all at Yale; Liberty Hyde Bailey (B.S. 1882) - was a student of Dr. William Beal, studied under and assisted Asa Gray and Louis Agassiz at Harvard, was Professor of Horticulture here at MSC for several years but he came into his greatest glory at Cornell University where he became an authority on horticultural plants, especially the Palms. He wrote over ninety books and hundreds of articles. There are two books and at least one major article published on his amazing life; John Broderick Routien (Ph.D. 1940) was a mycologist who taught at the University ^{of Missouri} and worked for years for the Charles Pfizer Co.; Horace Leslie Barnett (Ph.D. 1937) was an instructor and Assistant Professor here during the period of 1937 to 1940. Most of his scientific life was then spent at the Agricultural Experiment Station at West ^{Virginia} University, Morgantown.

Several honors came to the Department itself, honors for which Dr. Drew should be given credit. The Carter Report on Graduate Education in the United States came out in 1964 and we were listed 13th nationally among Departments of Botany and in 1969, the Roose-Anderson Report rated us 9th nationally among the Departments of Botany and we were the only Department at MSU to rank in the "Distinguished" category.

When the Administration planned to construct dormitories in our study area known as the Sanford Woodlot, vigorous protests by Drs. Drew, Cantlon, Beaman,

the Natural Areas Council and prominent alumni saved most of it from this senseless destruction.

Toward the end of the 1960's, the Department lost Dr. John Cantlon to Administration as the new Provost and Dr. S.N. Stephensen took over the research projects and direction of graduate students while Dr. Peter G. Murphy was hired to handle the principal course in Plant Ecology and to develop his own research projects. Meanwhile Dr. Beeskow had retired and Dr. Kenneth Nadler with a doctorate from Rockefeller University replaced him. Dr. Gerald Prescott retired and was replaced by Dr. Brian Moss, a young British *Phycologist*; Dr. G.B. Wilson succumbed prematurely in 1968 and Dr. William Tai, with a doctorate from Stanford University, was his replacement. Sadly enough, Dr. Ervin Barnes contracted a fatal illness and he was replaced by Dr. Gary Hooper, a recent Ph.D. from the University of California at Davis. The Small Grains program was in need of enlargement and Dr. Maury Wiese took over this responsibility.

Turfgrass diseases were becoming a problem and a team was put together to research the area. Dr. Joseph E. Vargas, a Plant Pathologist was our member of the team and study in this difficult field is now showing results.

Space-age technology, emphasized, among other things, the usefulness of satellites in orbit to record data pertaining to the earth's surface, including crops. Satellite imagery was known to be of use in pin-pointing areas with concentrations of diseased plants. Thus, a project was set up, in cooperation with the University of Michigan and with Dr. Axel Andersen in charge. Our Experiment Station asked Dr. Gene Safir, a Plant Pathologist with a strong background in Mathematics and Physics, to carry out the research on this project, along with faculty members Drs. Ellingboe and Nicky Smith, the latter scientist being mainly but not exclusively concerned with the extension aspects.

In 1967, Professor DonCation retired and to replace him, Dr. Alan Jones, with a Ph.D. from Cornell University, was hired. He did both extension and research work, especially on the newly-discovered mycoplasmas.*

The Department, under Dr. Drew, had been trying for some years without too much success to add more Pathologists to the Cooperative Extension Service, with joint appointments but when the new Director, Dr. George McIntyre was appointed in the early 1970's, we were able to add Dr. Frank Laemmlen to handle ornamental Plant Diseases and Dr. Donald Ramsdell for Small Fruit Diseases. Both had graduated from the University of California, Davis.

In 1970, Dr. Anton Lang, who has been mentioned previously, was asked by the National Academy of Science to head an International Committee to investigate the ecological effects of herbicides used by the military forces in Vietnam. In 1971, Dr. William Drew, Head of the Department of Botany and Plant Pathology, was asked to join this team, based upon his familiarity with secondary plant succession in the forests of Thailand.

This seems to be the appropriate place to mention some of Dr. Drew's other accomplishments. Prior to his retirement, he had searched, with others wild places in Latin America in the search for rubber substitutes. He was recruited by the Aid program for consulting services in Argentina, Indonesia, Taiwan and Thailand. In 1974, he devoted nearly six months as field team leader of a team of scientists from the Midwest University Consortium for International Activities in a study of all levels of education, extension, and research in Agriculture and Veterinary Medicine in Thailand. In 1976, he was drafted by MSU to assist in evaluating a four-year project at 6 Universities in Brazil.

During the 1970's, Dr. Ralph E. Taggart, a Ph.D. graduate from this Department, was added as a joint appointee with the Biological Science Program; and in 1972, Patricia Werner, also a Ph.D. holder from MSU, was given a joint

* (to be inserted) Dr. Jones, together with P. David Fisher invented the Apple Scab Predictor to inform the grower when a herbicide spray is needed to control the disease, a condition which greatly reduces the cash value of the fruit. It is marketed by the Neogen Corporation of East Lansing.

appointment with the Kellogg Gull Lake Biological Station. In 1973, George Parmelee, mentioned earlier, was given an adjunct appointment with Campus Park and Planning. Dr. George Bird has had a joint appointment since 1973 with entomology.

Dr. Drew retired as Chairman after 25 years of service and Dr. Edward Klos, a member of the staff was appointed Acting Chairman but being in Europe at the time, Dr. Drew served informally during the month of July.

In 1974, Dr. Fred H. Tschirley was appointed Chairman of the Department. Some of the faculty appointed during his tenure include the following: Dr. George S. Ayers, 1974, is concerned with the Pest Management curriculum and holds a joint appointment; Dr. Lynn Patrick Hart, specialist in diseases of corn, small grains, forage crops, sunflowers and crop loss assessment; Dr. Kenneth L. Poff, 1974, has his major duties with the DOE Plant Research Laboratory and Dr. Christine Taylor Stephens as an extension specialist in the diseases of bedding plants and vegetables. Dr. Tschirley served as Chairman until 1979 after which he devoted his energies to serving as Pesticide Coordinator while retaining his Professorship. He retired from University duties in 1985.

In 1979, Dr. Edward Klos was named Chairman and serves until the present time. He has had to devote the major portion of his time to administrative duties but maintains, at the same time, an active program in the field of Pathology. Some of his appointments, up to the line of this writing, include: Dr. Karen Baker (B.S. 1972, M.S. 1974, Ph.D. 1977 all at MSU) assumed, in 1981, the duty of Director of our fine Center for Electron Optics; Dr. Frank Ewers, in 1984, as teacher of plant anatomy and morphology; Dr. Raymond Hammerschmidt, in 1980, as a Plant Pathologist with emphasis on disease physiology; Dr. Dennis Fulbright, in 1979, as a plant pathologist; Dr. Barbara Sears in January of (to be inserted) Dr L.P.Hart invented with J.J. Pestka a kit to detect toxic chemicals in food supplies. It is marketed by the Neogen Corp. of East Lansing.

~~B. Beal~~

1983, as teacher and researcher in Cell Biology to replace the departed Dr. W. Tai; Dr. Christopher Somerville^W, in 1982, with a joint appointment with DOE, to continue his research in the fields of Genetics and Molecular Biology, replacing, in part, the retired Dr. Leo Mericle. Other members of the DOE Laboratory who have joint appointments with our Department are Drs. Hans Kende, Peter C. Volk and Jan A. D. Zeevaart. Dr. Gerald Adams was an appointee of Dr. Klos, as of August 15, 1985 and works on the diseases of ornamental plants.

Up to this time, we have dealt mainly with beginnings and personalities. It now remains, to mention briefly, other aspects of Departmental activity.

The Beal Botanical Garden has been mentioned previously. Dr. George Parmelee ^{*We have drawn upon*} has ~~written~~ ^{*written by him*} a fine report on the Garden from which we extract. The original garden was began in 1873 and consisted of 140 plots of grasses and clovers but, when Dr. Beal retired in 1910, the garden occupied ^{*a third*} 1/3 rd of an acre and included more than 2100 taxa. In 1950, the Division of Campus Park and Planning was given charge of the garden. At the present time, 1985, the garden has grown to about 6 acres, has over 5,000 taxa and is divided up into a systematic section, one devoted to economic plants, an ecological area representing plant communities and lastly, a landscape section. Today, the gardens attract thousands of students and visitors each year and is one of the great attractions on the campus.

The Arboretum at first, in 1875, consisted of 215 species of trees and shrubs planted at the north entrance of the College but now, the entire campus is a wonderland of many species and a great source of knowledge. Dr. Beal, also planted a grove of pines on Hagadorn Road, south of the Red Cedar River, called the Pinetum.

Most departments have student clubs which are designed to create a spirit of unity and to gather information not available in regular class work. Our

Department has had several clubs in existence but the first one was started by Dr. Beal and was called the "M.A.C. Botanical Club" but this became dormant about 1910. Dr. Charles Bessey, whom we have mentioned earlier, and who was a graduate of M.A.C., started a club at the University of Nebraska called Seminarium Botanicum and when Dr. George Coons came on the staff here, he started a similar club about 1913. Students met to discuss recent developments, learn to read research papers in foreign languages, collect specimens for the herbarium, thus becoming familiar with the local flora and so forth. There was copious use of Latin phrases, a good deal of ceremony, reminding one, in a way, of fraternity or sorority rites and a good deal of good-natured fun.

Herbaria are an important facility in any Botany Department because one can check its specimens to make certain that the species one is writing a paper on is indeed that taxon. We have three herbaria. The first is the Beal-Darlington Herbarium supervised by Dr. John Beaman. It is used to verify specimens, is used in course work and serves the general public. Today it houses more than 230,000 specimens. Another herbarium is called the Cryptogamic Herbarium curated by Dr. Henry Imshaug and which contains over 100,000 specimens of algae, fungi, lichens and bryophytes. The third collection consists of fossil plants, is curated by Dr. Aureal Cross and is housed in the Natural Science Building.

Another distinctive unit of our department is the Plant Disease Diagnostic Clinic which has a suite in the Plant Biology Building. As the name suggests, it is the place to which diseased plants are brought for identification of the pathogen and for suggested treatment. Dr. H. Spencer Potter was in charge of the first Clinic (in 1961) and he continued in that capacity until 1972 when Dr. Frank Laemmlen was hired to continue the work. *Both persons have since resigned or retired.* At present, the unit is operated by clinicians who refer difficult

problems to qualified personnel within the department. Some of the clinicians who have served as well are; Herman Warren, Delbert Bierlein, Harold Bochstahler, Richard Crum, Sandra Perry and David Roberts.

[It should be strongly emphasized that] this service to farmers, the general public and faculty members in other departments is of immense importance.

We have now briefly summarized the development of our department over a 128 year period, noting the tremendous growth in both staff and resources.

The 1980's have become, biologically speaking, an extremely exciting period with our growing success with both molecular and chemical approaches in solving botanical problems. As in other fields of science, new vistas are continually unfolding before our eyes and the future looks bright indeed.

APPENDIX

- Beal, William J. 1915. History of the Michigan Agricultural College and Biographical Sketches of Trustees and Professors. Lansing, Wincoop, Hallenbeck and Crawford Co. State Printers.
- Kuhn, Madison 1955, Michigan State, the First Hundred Years, 1855-1955. E. Lansing, The Michigan State University Press.
- Blair, Lyle and Madison Kuhn 1955. A Short History of Michigan State. idem.
- ~~Lautner~~, Harold W. 1977-78. From an Oak Opening, a Record of the Development of the Campus Park of Michigan State University, 1855-1969. 2 vols. Mimeo.
- President Abbot 1882. The Earlier History of the Michigan State Agricultural College up to its Re-Organization in 1861, in First Biennial Report of the Secretary of the State Board of Agriculture of the State of Michigan from September 1, 1880 to September 30, 1882.
- Anonymous 1911. Michigan Agricultural College - Catalogue of Officers and Graduates, 1857 - 1911. E. Lansing, Michigan
- College Catalogues (in the Archives) from 1857 to the present.

After a grant has been
obtained to pay for
research, typing, printing
and distribution, the
typing should be made
camera ready on special
paper in a rectangle
6-6 3/4 in by 9 in long

A HISTORY OF THE DEPARTMENT OF
BOTANY AND PLANT PATHOLOGY AT
MICHIGAN STATE UNIVERSITY
BY
IRVING W. KNOBLOCH

With the cooperation of Drs Drew, Andersen, Beaman and Parmelee

TABLE OF CONTENTS

Introduction

The evolution of course structure

Dr. Beal's report for 1878

Dr. Beal's report for 1910

Dr. Bessey's brief history of the Department of Botany and Plant Pathology

Dr. Drew's report for the years 1948-1973

Dr. Andersen's report on the history of plant pathology

Departmental Activities

1. History and educational value of the W.J. Beal Botanical Gardens by Dr. Parmelee

2. Seminarium Botanicum

3. Plant disease diagnostic clinic

4. The herbarium

5. Michigan Flora

6. Botanical Museum

7. The greenhouses

8. Arboretum

9. Student awards

Former Faculty Members

Obituaries of some former faculty members

Some prominent alumni

Present Faculty Members

Support Staff

Appendix

1. Campus reflections by Ernest A. Bessey in 1944

2. "Bessey leads grad school" , 1930-44

3. Recollections of my early days in the Botany department by Dr. Herbert C. Beeskow

INTRODUCTION

47

The history of the Department properly begins with the founding of the college here in 1855. This is a long and fascinating story, the telling of which would comprise a volume in itself. Our story will be necessarily brief for this reason. Fortunately, the story has been told ably by others* and these sources should be consulted. The accounts mentioned correspond in a remarkable fashion but one can note some minor differences here and there.

Michigan was admitted to the Union in 1837 and, in the same year, the University of Michigan came into being. In 1849, a State Agricultural Society was formed and in the very next year this Society petitioned the legislature for the formation of an Agricultural College to meet the needs of the predominantly rural population.

*

Beal, William J. 1915. History of the Michigan Agricultural College and Biographical Sketches of Trustees and Professors. Lansing, Wincoop, Hallenbeck & Crawford Co. State Printers

Kuhn, Madison 1955. Michigan State, the First Hundred Years, 1855-1955. E. Lansing The Michigan State University Press.

Blair, Lyle and Madison Kuhn 1955. A Short History of Michigan State. E. Lansing, Michigan State College Press.

Lautner, Harold W. 1977-1978. From an Oak Opening, a Record of the Development of the Campus Park of Michigan State University, 1855-1969. Vols 1 and 2. Mimeo., Bound

substitute
bottom of
pg 5 (next page)

The Michigan State College catalogue of 1857 is entitled "The Agricultural College of the State of Michigan, Lansing, Michigan" , Hosmer and Fitch , book and job printers , 1857.

The Faculty of the institution was Joseph R. Williams, President and Director of the farm , Calvin Tracy , Professor of Mathematics , Lewis R. Fisk, Professor of Chemistry , * Henry Goadby , Professor of Animal and Vegetable Physiology and Entomology , * D. P. Mayhew , Professor of Natural Science , Robert D. Weeks , Professor of English Literature and Farm Economy and Secretary , ** John C. Holmes , Professor of Horticulture , and Treasurer , Enoch Bancker, assistant in Chemistry.

* These gentlemen have not entered upon the performance of their duties. Dr. Goadby will do so when the Board of Education notify him that his services are required , and Mr. Mayhew as soon as an existing engagement permits.

(Ed. * Dr. Goadby's name is in the 1859 catalogue. Money for his salary was not available in 1857)
** John C. Holmes did not teach courses. He took over the planning + maintenance of the campus

John Clougⁿ Holmes was the energetic Secretary of that Society and dealt with the Legislature in many of the matters relating to the prop^osed college. Five years later , on February 12, 1855 ,Governor Kingsley S.Bingham signed the law establishing what was then called "The Agricultural College of Michigan." The State Board of Education was then empowered to implement the law and soon about 677 acres of almost virgin forest were purchased in the present location. The clearⁱng of much of this tract, so that buildings could be erected thereon, was a herculean task indeed. At first, only three poorly-constructed buildings were planned.

John C. Holmes was evidently Superintendant of Horticulture which, at that time meant that such a person was in charge of the college park, vegetable garden , orchards, nurseries, greenhouses, borders, walks and drives. The title does not refer to the Department of Horticulture which did not come into existence until later. Holmes is listed as Treasurer from 1856 to 1858 and later he was named Secretary. He moved the library of the State Agricultural Society into one of the three buildings , our first library.

Before opening a college, a faculty had to be assembled and this was done in early 1857. [According to Blair and Kuhn's book the faculty consisted of President Joseph Williams, Weeks in English , Bancker , assistant in Chemistry, Tracy in Mathematics and Fisk in Chemistry. Holmes was the Secretary. However , according to Dr. Bessey's history, Henry Goadby , M.D. should be added as one who taught animal and vegetable physiology, but only from 1859-60 In addition to Goadby , a David Porter Mayhew is mentioned in an early catalogue as being a Professor of Natural Science in 1857. Blair and Kuhn's book omit both of these men.]

omit this
+ substitute
page entitled
"The Michigan State
College 1857"

[to]

Strangely enough ,according to Lautner ,p 24,vol.1 , President Williams and John C.Holmes were asked to resign on March 8,1859 but in 1860, Holmes is back as Superintendent of Horticulture.

The fledgling College opened May 13,1857 with 70 students according to Kuhn, 73 according to Beal or 63 according to Blair and Kuhn. Some figures for latter years are 1874 (121),1877 (154), 1879 (232), 1891 (345) , 1904 (917) , 1911 (1600), 1952 (13,5000) , 1956 (17,000) , and 1979 (44,000 with 780 taking Botany courses.

The Civil War started in 1861 and George Thurber,in charge of Botany at that time , drilled the students (women were not admitted until 1870), and the entire graduating class of 1861 enlisted , two months before commencement.

In 1862 ,President Lincoln signed the Morrill Act thus giving the young college over 200,000 acres of land (much of which was sold to support the College). In 1887, Congress passed the Hatch Act which established ,in 1888, an Agricultural Experiment Station.

As late as 1899 or 1900,Lansing itself was but a clearing in the woods accessible only by stage coach and it was surrounded by many swamps. At times the road from Lansing to the College was impassable although about this time there was a connecting street car line with service to the College every half hour.

East Lansing was incorporated in 1907,with home garbage service starting in 1919 and door to door mail service not until 1921.

According to President Abbot's 1881-82 Annual Report (see Lautner pp 52-52, Vol. 1), the Department of Horticulture was established in 1882 with the effective date of operation being January 1, 1883. It was to be under the management of James ~~W.S.~~ Satterlee , a local graduate of the class of 1869. He was to be assisted by a florist named James Cassidy and a foreman.

Forestry became separate as a Department in 1902.

In 1933, the name of the Botany Department was changed to "Botany and Plant Pathology and Dr. Anderson's report will amplify this matter

From Dr. Kuhn's book we learn that the first Ph.D. granted in the entire college was given to a botanical student named Edward J. Petry , in 1925, for his thesis " Physiological Studies on Ceanothus Americanus. Incidentally, in that same year, the Botany Department had 33% of all the Ph.D.'s on the campus. No doubt, Dr. Bessey's training in a German University (Halle) was a major factor accounting for the respect for the doctorate held within the Department

MICHIGAN STATE UNIVERSITY

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
DEPARTMENT OF HORTICULTURE
HORTICULTURE BUILDING

EAST LANSING • MICHIGAN • 48824-1112

July 10, 1985

Knobby:

I like this better than your first draft, for you've added information to make the names more meaningful. As usual, I've put in my 2¢ here and there in terms of editorial suggestions. I have not sent this on to George; I'll let you do that after reading these comments.

Some specific comments:

- Why not include a section entitled "The Beal Era". 40 years should qualify!
- p. 5--The section on Beal reads more like "who's who in whatever" than a history of the Department. I would prefer several paragraphs devoted to "major" accomplishments (grass museum, seed testing & longevity, corn experiments).
- p. 6--There was a "Horticulture Department" as early as 1863, but it was really a "Campus Parks and Plantings" Department, with no teaching responsibilities aside from supervising students working on the grounds.
- p. 6--Bessey - as for Beal, you list many accomplishments. These could be listed in an appendix, so as not to detract from the "flow of history".
- p. 7-24--Much of this information, although valuable as history, is not very interesting. Some (e.g., p. 7--"Bertha I. Thompson (1910-1925) was an assistant professor".) might better be listed alphabetically, with dates of appointment/resignation and positions held. George and I have this problem, too. You have to decide whether you're writing as an archivist or as an historian. If the latter, I would put details in the appendix and put more emphasis on the Department as a whole.
- What about other members of the PRL? Was Arntzen a member of the Biochemistry Dept.?
- p. 26--Is curate a verb?
- p. 34--Order of listing column does not appear to be either alphabetical or chronological.

3-22-85
L. Antel

Keep copies of
pp. relevant to HRT

2nd
copy

BRIEF
A ~~CONDENSED~~ HISTORY OF THE
DEPARTMENT OF BOTANY AND PLANT PATHOLOGY
AT
MICHIGAN STATE UNIVERSITY
BY
IRVING W. KNOBLOCH, PH.D.
PROFESSOR EMERITUS
WITH THE COOPERATION OF
DRS. WILLIAM DREW, AXEL ANDERSEN, JOHN BEAMAN AND GEORGE PARMELEE

198_

Not to be copied or published without the consent of the editor,
Dr. I.W. Knobloch.

Edited by Frank Dennis
see letter

TABLE OF CONTENTS

- I. The Early Years - 1857-1910
- II. The Ernst Bessey Era - 1910-1945
- III. The William B. Drew Era - 1948-1973
- IV. The Years Under Fred Tschirley, 1974-1979
- V. The Modern Era - Edward Klos 1979 to present
- VI. Departmental Activities
 - Plant Disease Clinic; Herbaria; Michigan Flora; Sem Bot
- VII. Student Awards
 - Ernest Bessey Awards; Wm. Fields Award
- VIII. Facilities
 - College Hall; Botany Hall; Natural Science Bldg.; Plant Biology Bldg.
 - Beal Botanical Garden
 - Arboretum
 - Greenhouse
- IX. Prominent Alumni
- X. Reflections
- XI Other beginnings
- XII References Consulted

The Early Years

The story of Michigan State College, now University, its departments and faculty is a most interesting and complicated saga. To develop this theme *story of 1950?* it was necessary to comb several books and hundreds of records (which are listed at the end of this history.) What follows is a brief summary which hopefully *in general* will capture something of the development of the college and of our department in particular.

Michigan was admitted to the Union in 1837. In 1849 a State Agricultural Society was formed and it petitioned the legislature to authorize the formation of a college to meet the needs of the largely rural population in the state. John Clough Holmes was the energetic Secretary of the Society, and, using his influence, finally persuaded the state and Governor Bingham to establish, on February 12, *law?* 1855, the "Agricultural College of the State of Michigan". The federal Swamplands Act of 1850 had allocated funds to each state to establish state schools of agriculture; *therefore* ~~and with all this in mind~~ the State Board of Education selected about 677 acres of almost virgin forest interspersed with swampland. The clearing of even a part of this land was a herculean task indeed but soon three poorly constructed buildings emerged, ~~one was~~ a dormitory nicknamed Saint's Rest, ~~another was~~ a classroom called Collge Hall, ~~for classroom use and the third was~~ a barn. *The first* ~~Before opening the college, a faculty had to be assembled and this was done in~~ *assembled* 1857, *and* These are listed in the 1857 catalogue as Joseph R. Williams, President, Calvin Tracy, Professor of Mathematics, Lewis R. Fisk,

Professor of Chemistry ,Robert Weeks , Professor of English Literature ,
John C.Holmes ,Professor of Horticulture and Treasurer (who did not teach
but maintained the grounds and helped students in their outside labor),Henry
Goadby ,Professor of Animal and Vegetable Physiology and Entomology (who did
not start teaching until 1859 and then only for a short time due to poor
health)David P.Mayhew (who resigned the same year as appointed because of a
previous commitment) , and Enoch Bancker , assistant in chemistry .

person-
historical
info
could
be
postponed
to end
of JV

There were 63 male students in attendance on May 13,1857 according to
Blair and Kuhn , 70 according to Kuhn and 73 according to Beal . Evidently
all who registered did not start classes [(as today)] [~~In recent years, it is not~~
~~uncommon to find~~] over 40,000 students ^{are} enrolled. Today , the campus is well-
manicured, but in 1857 ^{as there were} ~~one found nothing~~ but forests and ~~many~~ swamps .In
fact , some people considered this site both unsuitable ~~and~~ unhealthy ;malaria
was common ~~here~~ ^{with this} and in 1859 all of the students and one of the professors came
down ~~the then~~ poorly-understood disease .For quite a few years ,the college
experienced financial woes and some feared it would not survive. The University
of Michigan strove mightily to have the college transferred to Ann Arbor.
In 1862 , however , President Lincoln signed the Morrill Act ,thousands of
acres of federal land were given to this college and the money received from the
sale of land enabled this fledgling institution to survive. ^{T.C. Abbot was the} *
^{MSC President (1862-1885).}

Relatively speaking ,cost^s were low in the mid 1800's. For example, from 1881 to 188
room at the college was \$ 1.25 per term and meals were \$ 2.38 per week.By contrast,
from 1979 to 1980 , the cost for these plus tuition,fees and books ^{was} ~~had risen to~~
about \$ 3,000 per year.In the early days , the students had classes from 8.00
to 12.00 ^{a.m.} ~~o'clock~~ and then worked outside on the campus from 12.45 to 4.00 pm.
For this work they were paid from 3 to 8 cents per hour and thus they were able
to pay most or all of their college expenses. With less than 100 students ,there
were very few courses offered in the field,mentioned above.From 1900 to 1901 ,

??

* After thought ?

under Beal, the only full-time faculty member in botany, the courses were Structural Botany, Histology, Fungi, Trees and Shrubs, Systematic Botany, Physiological Botany and Forestry. [An entire volume could be written on the course changes to the present.] In the school year, 1979-1980, there were over 60 different courses offered. Advances in scientific knowledge breeds complexity in course structure but ~~[there will always be a need for]~~ basic courses upon which one can build, *will always be needed*

*but not
an interesting
one !!*

[It is now appropriate to list the name changes that have been made in our institution and, secondary, the names and tenures of the Department heads.]

The growth of Michigan State University from an Agricultural college in 1855 to a major university was accompanied by ^{numerous name} [a number of] changes [in names].

The names and years of change are listed below:

1855-Agricultural College of the State of Michigan

1861-State Agricultural College

1909-Michigan Agricultural College

1925-Michigan State College of Agriculture and Applied Science

1955-Michigan State University of Agriculture and Applied Science

1964-Michigan State University (established by the new
constitution)

Department Heads

W.J. Beal, 1870-1910

E.A. Bessey, 1910-1945

F.L. Wynd, 1945-1948

W.B. Drew, 1948-1973

E.J. Klos (Acting Chairman), 1973-1974

F.H. Tschirley, 1974-1979

E.J. Klos, 1979-present

Head vs. Chair. ??

~~We shall now name and briefly comment on the faculty which presided over the early years, 1857-1910.~~ As a point of clarification, it should be noted.

that although the College was authorized in 1855, its doors did not open until

1857. ^{M.D.} This was the year in which Dr. Henry Goadby was to start teaching botanical subjects. ^{in 1857, but} Funds were ~~too~~ scarce ~~in 1857 and,~~ as a result, his

teaching duties started in 1859. ~~Henry Goadby, M.D.~~ came to East Lansing from

the Royal College of Surgeons in London and was the author of ~~a~~ ^{the}

widely-acclaimed ~~textbook~~ entitled "A textbook of vegetable and animal

physiology". ~~It is believed that~~ ^{apparently} he served only a year, ~~resigning~~ because of poor health.

President Abbot took over some of his duties for a time when he resigned (Kuhn p. 58). In 1860, Dr. George Thurber, another medical doctor was

appointed ^a friend of famous botanists and member of the United States-Mexican

Boundary Survey of 1850. He was well-received but left in 1863 to seek a more

wholesome professional and financial climate. "I am starving here", he is

reported to have said. Later, he became Editor of "the American

Agriculturist".

Albert Nelson Prentiss entered MAC in 1858, ~~and~~ ^{and} studied ~~his~~ botany under Drs. Thurber and Goadby, graduating ^{and} in 1861 with a B.S. degree among a class of

seven, the first graduating ~~class~~ from the College. He was an instructor

from 1863 to 1864, receiving his M.A. degree in 1864. ^{He succeeded Thurber in teaching} ~~He taught~~ the botanical

subjects ^{from 1863} ~~(when Dr. Thurber resigned in 1863)~~ until 1869 when he left for a more

promising career at Cornell University. He turned out many famous botanists,

both here and at Cornell, including Charles Bessey, C.W. Garfield and W.W.

Tracy.

In 1870, the famous William James Beal appeared upon the local ^{botanical} scene.

Volumes could be written upon this man's accomplishments (in fact one such

volume has ^{be} appeared). Our treatment will of necessity ^{be} brief.

~~because we have almost 100 more years of history to record.~~ Beal's own account is given in his 1915 book (see *References*) but a great deal of other data can be found in his 1910 report to the State Board of Agriculture where his 40 years of work here is detailed. Beal was born in Adrian, Michigan, the 11th of March 1833 and he died in Amherst, Massachusetts the 12th of May 1924. He lies next to his wife Hannah in the Mt. Hope Cemetery in Lansing, Michigan.

A few highlights of the career of this remarkable man follow: Professor and Lecturer in numerous schools prior to 1870; first President of the Michigan Academy of Sciences; Secretary of the American Pomological Society; originator of a grass garden, a botanical garden, an arboretum, a weed garden, and a botanical museum. He wrote about 17 books including the first Grass Flora of North America, ^{and} many bulletins and scientific articles; ^{was} a force in starting the "Farmers Institutes"; planned some of the roads and walks on this campus; planted and tended many trees and shrubs including the "Pinetum"; started here the first seed-testing laboratory in the United States; initiated in 1879 what is probably the first long-term seed longevity experiment, a study which is only now coming to a close (21 species of plants tested every five years to 1920 and every 10 years thereafter - see Kivilaan and Bandurski in *References*); and in 1877, he performed important experiments on the corn plant demonstrating that when yellow flint and yellow dent strains were forced to ^{crossed} cross-pollinate, the yield was considerably increased. Drs. Davenport, Holden and Shull following his lead elsewhere, produced inbred lines which, in turn, led to modern hybrid corn.

^{his assistants in} Beal did ~~have some help with his~~ teaching during his 40 years here. ^{included} ~~These were~~ Ellen Bach, James Brown Dandeno, Lyster H. Dewey, Margaret B. Dupee, Gilbert H. Hicks, Edwin R. Lake, William E. Lawrence, James William Toumey, B.O. Longyear, Anna Bell Lee, Rose M. Taylor, Clare B. Waldron and Charles F. Wheeler. Most of these ~~were assistants and stayed for~~ ^{only} short periods. Charles Wheeler, however, studied ^{Henry E. Owen}

* Initials or names

Eugene Davenport

Fungal

diseases ~~caused by fungi~~ such as black knot, apple scab, celery leaf blight, corn smut and others. Burton O. Longyear, famous after he ~~left here~~ ^{moved to} for Colorado State University, worked on potato blight and taught courses in plant pathology. He was also consulting botanist for ^{the MSC Experiment Station.}

Approximately 123 faculty members have served our Department from 1857 to the 1980's, ~~and this does not include~~ ^{excluding some of} the newer members now serving. In 1984 alone, there were 58 Faculty and Associates plus many staff and graduate students. Botanical ~~spin-offs~~ ^{subjects} are now taught by large staffs in ^{the} Horticulture, Forestry and Crop and Soil Science Departments.

~~Before passing on to the next Department head, it should be emphasized that there were few departments on campus in the early days. Horticultural~~ matters were handled by whomever was teaching Botany. According to President Abbot's 1881-1882 Annual Report, a Department of Horticulture was authorized in 1882 with its proposed opening set for January 1, 1883. A MSC 1869 graduate, James Satterlee, was to be in charge but he served only to October 9, 1884, resigning to take a position with the Michigan Department of Health; later (1910) taking over as treasurer of the State Horticulture Society.

except that there was a Horticulture Dept. (= Grounds Dept.) as early as 1863.

In 1885, Liberty Hyde Bailey, ^{Jr. ('83)} ~~also a local graduate~~ ^{became} took over the Headship of Horticulture and remained in that position until 1888, whereupon he left for Cornell University. Forestry became an independent department in 1902 thus further easing ^{Beal's} the work load of ~~Dr. J. Beal~~.

The Ernst Athearn Bessey Era 1910-1945
^{Succeeded} Dr. Ernest Bessey ^{as Head} took ^{Served until 1945} Beal's place in 1910 and had a long tenure. His father was the renowned Dr. Charles Bessey, ^('81) ^(title) ~~a former student here and an important scientist at both Iowa State University (then College) and at the University of Nebraska. A few milestones in Ernst Bessey's career were summarized by Dr. Beeskow: 1896 - A.B., Univ. Nebraska; 1897-B.Sc. Univ. Nebraska; 1899 - M.A., Univ. Nebraska; 1899-1908 - studied in Europe and~~

collected in Russia , Turkestan and Algeria for the USDA ; 1904- Ph.D. from University of Halle under Georg Klebs ; 1908-1910 -Professor of Botany, Louisiana State University ; 1910-1945 - Professor and Head of botany ,Michigan State College ; 1927-1934 - Acting Dean and later Dean ,Division of Applied Science and Graduate School plus regular departmental duties ; 1939-1940 -Visiting Professor ,University of Hawaii ; 1950 - published "Morphology and taxonomy of the fungi " ; 1956 - recognized as one of the 50 outstanding botanists of his time by ^{the} Botanical Society of America . ^{Among his contributions was a study} ~~Dr. Bessey did manage to do some research~~ on the orange rust of raspberries and blackberries. He died in E.Lansing the 17th of July 1957 at the age of 80 years.

Bessey's staff was never large or too well-paid ~~at any time~~. His philosophy included turning back allotted funds to the College and ,as a result , the department's equipment deteriorated during his tenure.

Richard deZeeuw , ~~with a~~ Ph.D. , ~~from the~~ University of Michigan ~~in~~ 1909 , taught under Beal ~~but~~ ^{and} continued under Bessey until his retirement in 1945. He taught general botany and microtechnique .

George Herbert Coons (1910-1929) researched sugar beet pathology after which he left to work for the USDA . He had been President of various national organizations. Ruth Florence Allen (1910-1914) was very active during her working years studying the cytology of the rust fungi, especially after she left here to work for the USDA. The Ruth Florence Allen Award is given in her memory annually to an outstanding plant pathologist . ~~The award is~~ (sponsored by the American Phytopathological Society) and Dr. Murakishi of our department was a recent recipient. Bertha I. Thompson (1910-1925) was an Assistant Professor.

Dr. Rufus Percival Hibbard (1911-1930) was our physiologist during this period. In 1925, he was President of the American Society of Plant Physiologists and, ~~in addition~~ ^{and}, published some important papers . * on what?

Dr. Jessie Howard Muncie (1913-1917 ; 1929-1954) . was well-known for his work with potato diseases. In 1953 , Muncie was President of the Potato

* J.C.Th. Uphof (1912-1913) was an Instructor and Director of the botanic garden and herbarium. He became very well-known after he left here.

for what?

Association of America ~~and~~ authored or co-authored more than 60 research papers on potatoes, beans, sugar beets, tomatoes, celery, cucumbers, cereals and ornamental plants. He was an Extension Specialist from 1929 to 1945.

Two ^{positions} ~~faculty persons~~ were added in 1914. Henry T. Darlington, (1914 to 1945 with a doctorate ^{Ph.D.} ~~from the~~ University of Chicago, (1923)), was our first taxonomist and in charge of the herbarium. He was also an ecologist and, ^{together} ~~to~~ ^{the surprise of some,} published, ~~with the important assistance of~~ Dr. Howard Crum of the University of Michigan, a moss flora of Michigan, a copy of which was placed in his hands as he lay terminally ill. Dr. Edward Woodcock ^{Ph.D. ?} (Yale 1917) was an accomplished anatomist teaching ^{what} this subject as well as poisonous plants, histology and general botany. Despite ^{or heavy} ~~this horrendous~~ teaching load, he published, from 1914 to 1950, 31 papers, ^{Including some dealing with} ~~some of them~~, latex-bearing plants.

Continue On