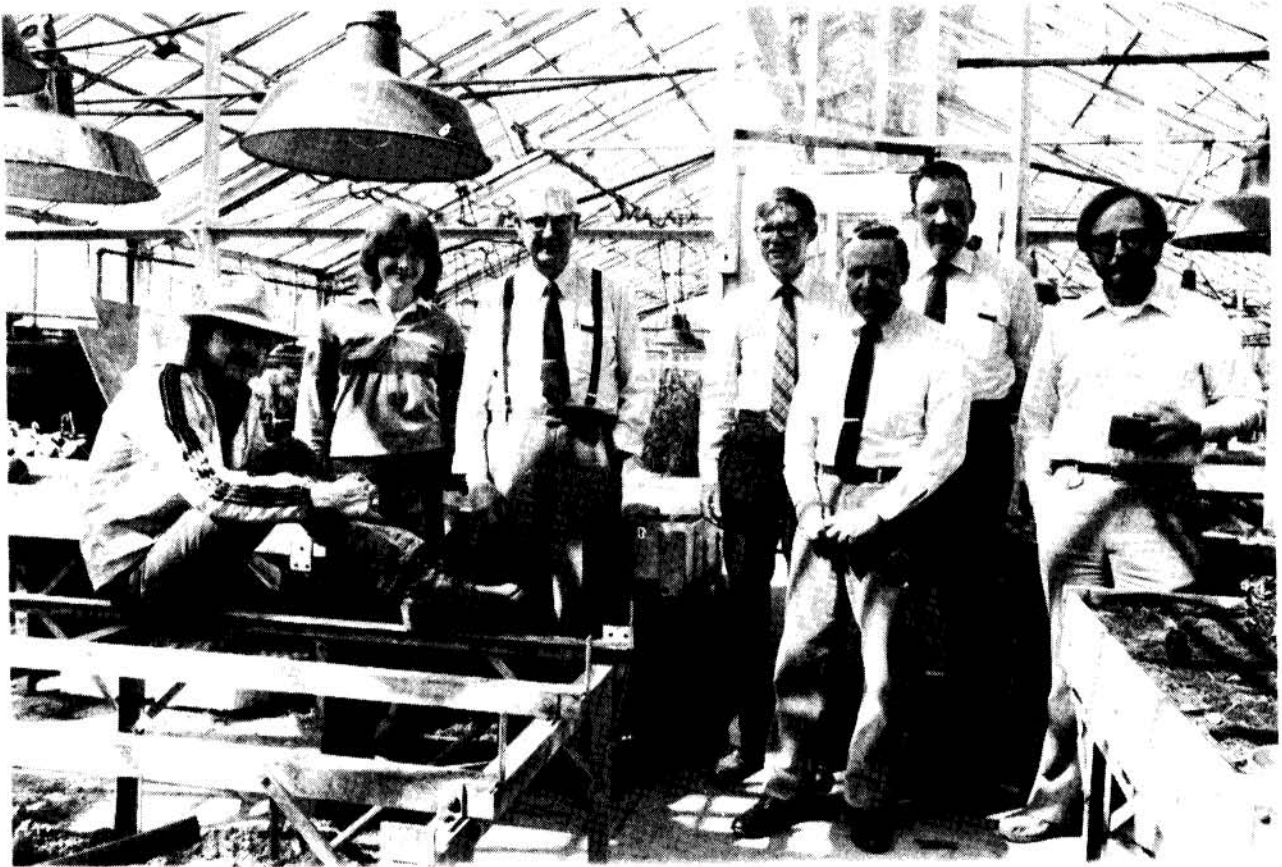


Aurora Sporealis

December 1994



Greenhouse, May 1983

**Department of Plant Pathology
University of Minnesota
St. Paul, Minnesota 55108**

Cover Picture—(L-R): Alan R. Pierce, Carol E. Windels, Carl J. Eide, Thor Kommedahl, Neil A. Anderson, Howard L. Bissonette, and Elwin L. Stewart.

MESSAGE FROM THE HEAD

Dear Old Timers:

As this letter is written we are still savoring memories of the APS meetings this past August in Albuquerque. Those days in New Mexico's pinyon-juniper, douglas fir, ponderosa pine, aspen and riparian forest sites, will be memories we'll treasure when the snow lies deep next winter. When this Aurora arrives another field season will be history and you will be into another academic year. Best wishes for a good one.

Most of you know by now that Dr. Phil Larsen resigned last spring as our department head. Phil will be returning to the staff after a one-half time sabbatical and a one-half time assignment for the coming year in the Dean's office. Phil is heading up the Kellogg Foundation's initiative to position the nation's colleges of agriculture to educate and prepare students for the demands of 2020. Phil's legacy to us is a well organized, well run department and we wish him all the best in his new adventure.

The new head comes from a 35 year background of teaching and research; the last 20 years under Dr. Eide's tutelage as a potato pathologist. I've chosen Aldo Leopold's "thinking like a mountain" (taken from his *Sand County Almanac*) as the theme for my time as head. As a young forester-wildlife biologist, Leopold went along with the concept that to improve hunting you had to protect deer from wolves. The result was a deer population so numerous that the mountains grasslands and forest tree reproduction were destroyed. Leopold concluded that "just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer". It's Leopold's ecological approach to biological problems and his appreciation for the land that I'd like to blend into all our teaching, research and outreach activities.

Let me bring you up to date on our research activities here at St. Paul.

The Cereal Rust Lab and the department lost Dr. Alan Roelfs to retirement this past year. Alan still has 3 graduate students so he will be coming in to help them finish. The rust survey work will be taken over by Dave Long and Dave Casper. The wheat leaf rust research is being done by Dave Long with input from Alan Roelfs and Yehoshua Anikster from the Israel-Minnesota project. Bill Bushnell continues his studies on host resistance which is both cytological and molecular. Some of Bill's research is cooperative with Dick Zeyen and some with a Plant Biotech Group on campus that have developed a transformation system for the oat plant. Les Szabo, molecular biologist, has found that PGT has 18 chromosomes instead of the mere 6 that the light microscope revealed. Les is mapping the old foe's genome via RAPD technology with the long term goal of transforming and cloning avirulence genes. He is also interested in phylogenetic relationships of grasses and cereal crops. Don McVey continues his work on the rust pathogens of winter wheat. Don gave us some moments of concern with a health problem this fall but things are looking good now. The Labs director, Kurt Leonard is continuing his population genetic studies. He and Dr. Kinkel are co-advisors to Miriam Newton the first student on the H.H. Flor graduate student fellowship.

The Forest Pathology Unit in the USDA Forest Service with OT Darroll Skilling as project leader will be getting new facilities soon. Phase I will be greenhouse and headhouse, Phase II laboratory and offices. OT Jennifer Juzwik is studying Fusarium root rot in white pine along with other pathological-physical conditions leading to root disease in forest tree nurseries. Jenny is also doing biological control work of the oak wilt fungus with Dave French. Cindy Ocamb, our resident Fusarium taxonomist, is also working on biological control of root pathogens in forest tree nurseries. OT Mike Ostry continues work on Septoria canker on hybrid poplars. Some of it is biocontrol, some is molecular with Dr. Glenn Furnier and Kathy Ward. Mike also has a project on hypoxylon canker of aspen. Paula Pijut is developing tissue culture techniques to propagate plantlets with resistance to the butternut canker fungus. Paula is also working with white pine in tissue culture. Darroll Skilling, besides administrative duties, is concluding his Gremmeniella work on larch and is now developing germplasm orchards for

obtaining resistance to the butternut canker fungus.

In the department we really miss Elwin Stewart, now Department Head at Pennsylvania State, and recent retirees Bill Kennedy, Roy Wilcoxson, Dave French, and Thor Kommedahl. Roy has been busy recently here and in Chapingo, writing a wheat scab monograph. Kommie continues his editorial work for us and the Minnesota Science Museum. Dave French is busy with biocontrol work on oak wilt.

Some real good news is the recent hiring of Dr. Ruth Dill-Macky as our new cereal pathologist. This was Dr. Wilcoxson's position. Ruth, a native Australian, and recent post doc at the Cereal Rust Laboratory already has major responsibility for the wheat-barley scab disease. A major plant pathology-plant breeding effort is under way on this project with Phil Larsen as coordinator.

Dr. Chet Mirocha maintains a large and active laboratory of graduate and postdoctoral students working on mycotoxins. The ever-fit and productive Chet just finished a 3 year stint as our director of graduate studies. Bob Blanchette is continuing his biopulping studies with the white rot fungi and is also doing biological control work on blue stain fungi. Frank Pflieger, Jim Percich, OT Craig Grau from Wisconsin, along with Drs. Dave Davis, Horticulture and Ray Allmaras, Soils, are teaming up to minimize losses to *Aphanomyces* root rot of peas. A recent paper at the summer meetings indicated they are making real progress. Jim Groth continues his population genetics studies using the bean rust system. His paper with Alan Roelfs on the virulence cluster groups of *Pgt* in the Mississippi flyway is a classic. It's part of the CRL-Department Cooperative efforts responsible for keeping the old foe check-mated for these past four decades.

Dick Zeyen, EM microscopist and administrator, virologist, R gene scholar, Borlaug Hall architect, department constitution author, and student of educational trends, in short our renaissance person— is doing all this out of an office with increasing resemblance to that of OT M.B. Moore. Molecular geneticist Nevin Young together with his group of graduate students and post doc's have found and located genes that give resistance to the soybean cyst nematode. These QTL, quantitative trait loci, are some of the first fruits of the departments molecular attempts to in part control this serious pest of soybean. Dr. Debbie Samac, molecular pathologist, on the alfalfa project, has been doing biological control work against *Pythium* and *Phytophthora* while developing a transformation system for alfalfa. Linda Kinkel continues her ecological-biocontrol studies on potato, wheat stem rust and dry beans. Linda and wildlife biologist spouse David are the proud parents of Nathaniel, born last January. Department members depending on vintage, are honorary aunties, uncles, or grandparents. How absolutely wonderful it has been to hear a baby's comments at a faculty meeting.

Ernie Banttari is developing and perfecting a monoclonal antibody technique with graduate students to quantify verticillium wilt fungi in potato. Ernie also continues research on aster yellows mycoplasma in potato. Anyone needing information on the construction of a Finnish log cabin should contact Ernie. Ben Lockhart has made some significant discoveries recently. Ben has found a group of viruses that are bacilliform in shape and contain DNA. These are only the second group of plant viruses known to contain ds DNA. These "retro" viruses are found in the vegetatively propagated tropical plants, sugarcane, banana, plantain, cocoa, rice, citrus, pineapple, and black pepper. You can see why Ben and department members are excited, Ben is developing means to detect and eliminate these viruses from their hosts.

Dr. Sagar Krupa has been busy with air pollution research collaborating with scientists in Germany and Canada. Sagar is beginning a new study involving global warming and this involves instrumentation sites in California and Minnesota. Dave MacDonald, our award winning teacher, is scheduled to teach a course on Diseases in the Home Garden this fall, Diseases of Horticultural Crops plus a course on Nutritional Maladies of Crop Plants winter quarter, a course on his beloved Nematodes in the Spring, plus teaching the summer Plant Pathology course during the summer sessions. Now that's a load and Dave rates with the all time great teachers, Louise Dossdall and Matt Moore, in educating aspiring plant pathologists.

Drs. Bob Nyvall and Jim Percich are co-advisors of Jason Brantner a student doing a thesis on diseases of wild rice. Bob is stationed in beautiful Grand Rapids, MN and does biological herbicide research on purple loosestrife. Carol Windels, stationed at the Crookston Experiment Station is doing research on the root pathogens of sugar beet. Carol has OT Cheryl Engelkes with her and together they are doing some exciting work on biological control of soil fungi. My own research with graduate students has been on biocontrol of potato scab, verticillium wilt of potato, genetic-natural history studies on *Laccaria bicolor*, an ectomycorrhizal symbiont, and an old favorite, hypoxylon canker of aspen.

Our outreach personnel, Frank Pflieger among them is studying the VAM fungi in roots of corn and soybeans and in plants found in the iron mine tailings of northern Minnesota. Frank has extension responsibility in our vegetable and greenhouse industries. Ward Stienstra does research and extends information to corn, soybean, and turf growers. Soybean cyst nematode and white mold of soybean are currently his major problems. Roger Jones really has his hands full with the wheat and barley scab and the late blight of potato epidemics these past two seasons. Roger and a student have also done interesting work correlating cell wall fatty acid profiles with the various anastomosis groups in *Rhizoctonia solani*. OT Dick Meronuck, on top of his grain storage and dry beans research and extension activities, also taught a course "Diseases of Field Crops" this past spring. The students really had a good experience in the class. Dick remains in demand when disaster strikes in the grain storage industry. Dean Herzfeld is in charge of our pesticide applicator program and in that job reaches over 40,000 applicators annually. Dean is a very industrious young man and is also working on a PhD degree in Vocational Technical Education. Cindy Ash is our plant pathology extension specialist in the Dial U clinic which deals with disease problems of all kinds. Cindy taught a course on "Diseases of Trees and Turf" last winter that had over 50 students.

The department continues as Dr. Stakman admonished us to "keep the scientific faith and find our greatest joy in it". We'd love to hear from our Old Timers and better yet have you visit us. Best wishes to you all for a wonderful 1995.

Sincerely,



Neil A. Anderson

EDITORIAL

The Times, They Are A Changing

As Robert Zimmerman, a native of Hibbing, Minnesota and better known as Bobby Dylan once said "The times, they are a changing." There appears to be a universal force loosed in this country that dictates post secondary education is not as important now as in the past. Times are changing not only for Departments of Plant Pathology but for Colleges of Agriculture and even for Universities. The job generating engine that is the University of Minnesota has been steadily undermined the last few years. An editorial in the Minneapolis Star and Tribune stated "The long-standing success story (of the University of

Minnesota) should be so well understood by Minnesota elected officials that none would knowingly undermine higher education. Yet that's exactly what has happened in the past four years. **Public colleges and universities have been big losers at the Capitol in the 1990s.** They began the decade claiming 14 percent of the state budget; this fiscal year, their share is 12.4 percent. If a spending cap put into law in 1993 is not lifted, their share will decline further."

Since 1991 the campus in Waseca has closed; faculty have been subjected to salary freezes in 2 of the past 3 years; more than 1,000 employees, 5 percent of the work force, have been laid off; key start-up features of University 2000, a quality-improvement program have been

delayed at least a year and maybe forever.

The times have passed when governors recommended and legislatures approved budgets for universities that provided adequate funding for: faculty and staff salary increases; supplies and expenses; and yes, even research. We are all familiar with a common scenario that goes something like this. A faculty member retires or moves to other employment. Instead of the vacant position being filled, the position is more likely to be retrenched, a euphemism for being eliminated. The money that ordinarily would go to support the position is given back to the Dean who in turn gives it to the Vice President (or Provost) then to the President. The moneys are then counted into the retrenchment demanded of the University by the Legislature and Governor. The consequence of this is research in plant pathology does not get done and classes either do not get taught or are taught by increasingly burdened academic survivors.

Governors and Legislatures can get by with continually cutting funds for the University of Minnesota for a number of reasons. There is no champion of the University either in the legislature or in the Governor's administration. Politically, it is safe to verbally blast the University and proclaim "They need to get their house in order." Universities have been depicted as bloated bureaucracies that waste money or have little or no accountability. The results of these actions usually do not have immediate consequences. Diseases of plants are researched for a number of years before results are utilized by the public. No one can judge the consequence of a disease that has not been researched. Faculty assume a larger teaching load or classes are not taught. Courses, many of them critical to the discipline, may not get taught. In our discipline of Plant Pathology, plant diseases destroy millions (perhaps billions) of dollars annually. Yet there is no hue or cry by the public to increase research and teaching in plant pathology or in the agricultural sciences. Food, fiber and ornamental plants in this country are cheap. We are not starving nor do we have any serious food shortages. With some temerity I would suggest our riches from the plant kingdom are seemingly without problems because of research conducted 10, 20, or 30 years ago. This is research conducted not only by plant pathologists but by plant geneticists, breeders, soil scientists, entomologists, etc. However, we are eating the seed corn and society will probably pay the consequences after the fact.


The University of Minnesota is not alone in this dilemma. Departments of Plant Pathology at the

Universities of Illinois, Missouri, Ohio State, California and others have undergone realignment or changes. It is not unreasonable to expect the same thing may happen here. However, realignments or changes forced by negative factors may give birth to positive results. Departments may cease to exist as separate Plant Pathology departments but be part of a biology or plant science department or form a union with another university or universities. Departments from different Universities may share teaching loads and research. Teaching will be done by interactive telecommunications. Perhaps, instead of a Plant Pathology Department at the University of Minnesota, it will be the Department of Plant Pathology of the "Upper Midwest". It is interesting to note that we at Minnesota already have a common reception at the Annual Phytopathology Meeting with the University of Wisconsin. Priorities may have to be sorted out and the "nice to do" projects eliminated in favor of "have to do" research. Faculty may not have the luxury of choosing what they research but rather what society or industry expects us to do. The danger in this is only the immediate obvious concerns may be addressed while disease problems with future consequences are ignored. Plant disease problems such as susceptibility to diseases wrought by shifts in germplasm or biological control of diseases may be highly significant to a future society but may not seem immediately critical.

Other consequences may be a redefinition of what is a plant pathologist. It may no longer be considered essential to be educated in all the major pathogen groups. Our area of expertise may become more and more narrow. Graduate student education will have to be reevaluated. What are the ethics of accepting students for masters and Ph.D. programs with little opportunity for employment? What will become of us as a discipline?

The times, they are a changing.

Sincerely,



Robert F. Nyvall, Editor

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Aurora Sporealis is an annual publication mailed to former and current faculty, staff and graduate students, and to *Old Timers* who worked in the Department of Plant Pathology, at some time or other. Any contributions can be sent to the Department Head at the address below.

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COVER STORY

Dr. Neil Anderson became Head of the Department of Plant Pathology beginning July 1, 1991. Neil is a native Minnesotan who was born on October 21, 1928 in Minneapolis. Neil began a long and distinguished career in plant pathology in 1956 as a pathologist for the Lake States Forest Experiment Station.

His first professional interest was in forestry. During his undergraduate summers, he worked as a Forestry Aide for the U.S. Forest Service in Tiller, Oregon. He received a BS degree in Forestry in 1951 and became a forester with the Iron Range Resources and Rehabilitation Commission. It was during this time that Neil's interest in plant pathology began to grow as he worked with Cliff Ahlgren in the Boundary Waters of northern Minnesota. Possibly the combination of scenery and Mr. Ahlgren's interest in resistance to white pine blister rust piqued Neil's curiosity in plant diseases.

He then served for two years in the Army in 1952-1954. After his Army discharge he entered graduate school, completing his Ph.D. in 1960. While working on his Ph.D. he also worked for the Lake States Forest Experiment Station. He has been a member of the faculty of Plant Pathology for 34 years, joining the University of Minnesota faculty as an Instructor in 1959-1960. He was appointed Professor in 1970.

Dr. Anderson's first research was on forest and nursery diseases of important tree species. He discovered that *Cylindrocladium scoparium* was an important cause of root rots of conifer seedlings in tree nurseries. He demonstrated the importance and etiology of stalactiform rust on jackpine, sweetfern rust on jackpine, needle droop of red pine and *Hypoxylon mammatum* in aspen. Previous research by other scientists was unsuccessful in determining the method of entry and infection of aspen by *Hypoxylon mammatum*. However, with collaborators Drs. Gerald Anderson and Mike Ostry, he discovered that infection by *H. mammatum* occurred primarily through insect wounds. In cooperation with Dr. Mike Ostry during many years of selection and mating of superior aspen clones, Dr. Anderson developed lines of aspen with resistance to *Hypoxylon* and improved silvicultural traits.

Dr. Anderson's interest in the genetic mechanism of pathogenicity led to his research on heterokaryosis and virulence of *Rhizoctonia solani* on flax and its effects on carrots, peas and potatoes. He confirmed the validity of

anastomosis groups in *R. solani* and genetics of the outbreeding mechanism and pathogenicity. This research on anastomosis groups in *Rhizoctonia* contributed to the concepts of vegetative compatibility groups in fungi, facilitating breeding for resistance to *Rhizoctonia* diseases in several crop diseases.

In his work on scab of potato, Dr. Anderson observed an intriguing phenomenon. The disease had progressively declined at the University of Minnesota North Central Research Station at Grand Rapids where original scab research had been done since the 1940's. With his students, he isolated antagonistic strains of *Streptomyces* sp. that showed an excellent bio-control of scab in potato and activity against *Verticillium dahliae* on potato and pathogens of other crops.

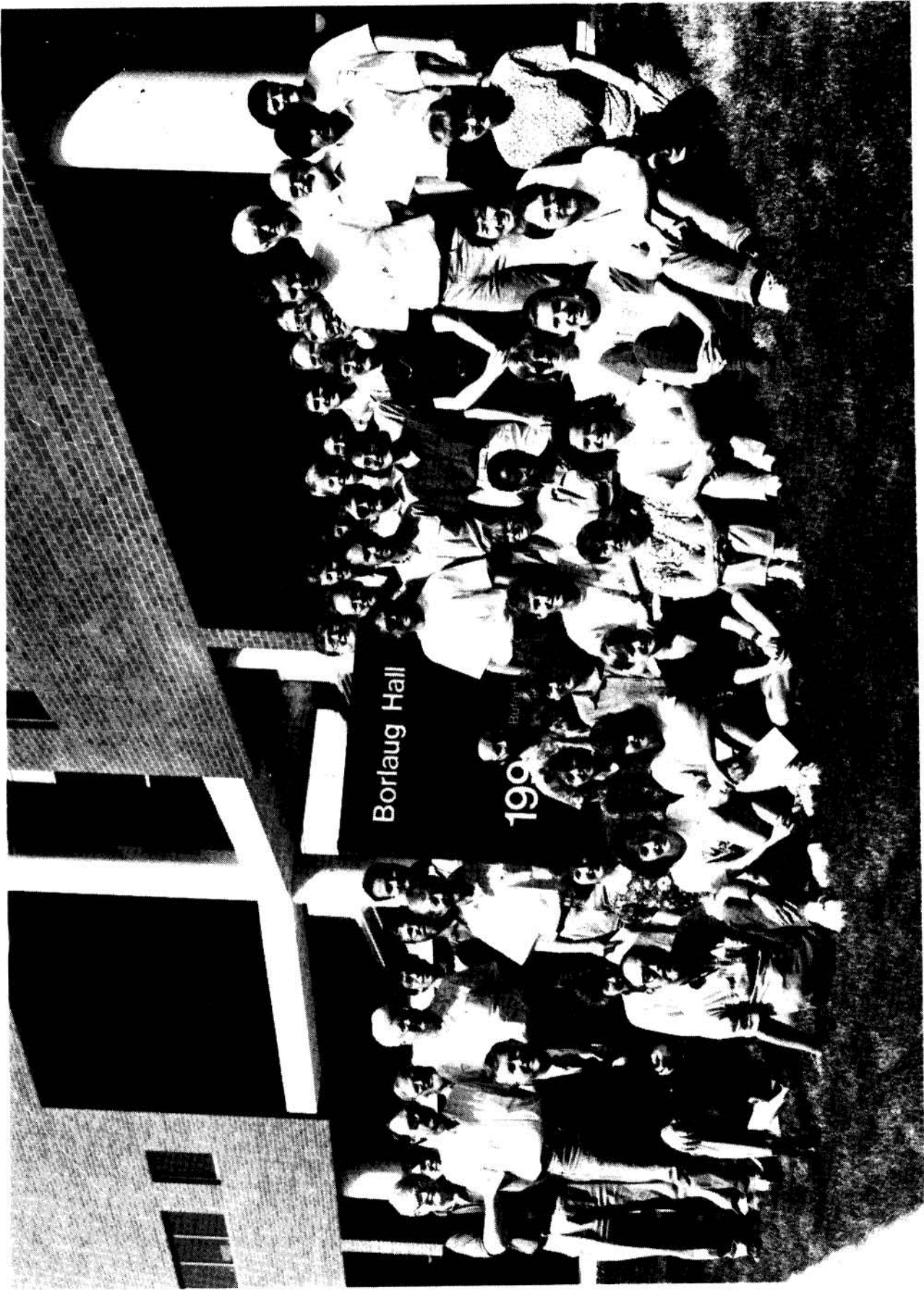
Dr. Anderson has demonstrated the success of keen observation of biological phenomenon, carefully planned research and persistence in fully exploiting his discoveries. The area of basic research Dr. Anderson has made the most contribution to is the study of genetic variation in fungi. However, he has combined in an exemplary way a unique balance between fundamental and applied research. He has carried out very practical, useful and valuable field research while investigating fungal genetics and examining mechanisms of pathogenicity of the organisms involved.

Perhaps no other member of our current faculty knows more about fungi than Dr. Anderson. Neil has taught an advance course in genetics of Plant Pathogens since 1962. He has been the sole instructor or part of a two-person team in three courses in Ascomycetes, Fungi Imperfecti and Basidiomycetes since 1959. As a service to the community, Neil has been continuously on call to Minnesota hospitals for mushroom identification when emergency calls come in on clinic cases.

Administering the Department will be a full time job. Hopefully Neil will still find the time to do some research and teach students. If not, the department will have gained an administrator, but will have lost an excellent researcher and teacher.







DEPARTMENT GROUP PICTURE

Front Row — left to right: Nevin Young, Wendy Jo White, Roxanne Denny, Julie Beale, Marguerite Clemens, Cecilia Jones, Kasia Duellman, and John Bowers.

Second Row — left to right: Sandra Gould, Jean Williams, Deborah Samac, Ruth Dill-Macky, Andrew Ryan, Jacolyn Morrison, Tsitsi Ndownora, Anne Kubelik, Junping Chen, and Delores Huebner.

Third Row — left to right: Paul Zambino, Akhilesh Mishra, Robert Blanchette, Miriam Newton, Debra Baden Drange, Samuel Boutin, and Dionicio Alvarado.

Fourth Row — left to right: Philip Larsen, Chester Mirocha, Todd Burnes, Richard Meronuck, J. Patrick Martinez, William Bushnell, Charles Hu, Donald McVey, Jack Schafer, and Richard Woodward.

Fifth Row — left to right: Roger Jones, Ward Stienstra, Francis Pflieger, Kurt Leonard, Brent McCallum, Amy Nelson, Jason Brantner, Chad Behrendt, and Thor Kommedahl.

Sixth Row — left to right: Richard Zeyen, Eugene Krueger, James Groth, Dean Malvick, and Pedro Figueroa.

Missing: Faculty — Neil Anderson, Ernest Banttari, Carl Eide, David French, Linda Kinkel, Sagar Krupa, Benham Lockhart, David MacDonald, Thomas Nicholls, Robert Nyvall, James Percich, Alan Roelfs, Darroll Skilling, Les Szabo, Roy Wilcoxson, and Carol Windels.

Academic Professional — Cynthia Ash, Dariush Danesh, Wenlian Deng, Cheryl Engelkes, Dean Herzfeld, Mark Hughes, Daqun Liu, David Long, Randy Strobel, and Weiping Xie.

Visiting Scientist — Piotr Golinski and Yi-Chun Xu.

Graduate Student — Nora Altier, Mohamed Bouhida, Timothy Clark, Vergel Concibido, Eric Eckwall, Laszlo Gyenis, Kathryn Kromroy, James Kurle, Kuo Chih Lin, Dennis McDougall, Mary Moberg, Abdelmajid Nadif, Robert Noyd, Javier Plasencia, Tarkus Suganda, Zhihong Yang, and Bruna Bucciarelli.

AFSCME/Civil Service — Dann Adair, Gilbert Ahlstrand, Gerald Amundson, Ann Arendt, Michael Balak, Erik Bieber, Grace Bucher, Amar Elakkad, John Haight, Cynthia Herrick, Odette Holter, Leslie Johnson, Kimon Karelis, Joleen Magsam, Bryan McCullough, Elizabeth Ozmon, Connie Post, James Rowe, and Shannon Skistad.

Federal Civil Service — David Casper, Christine Newby, Gerald Ochocki, Rosalind Richards, and Shawna Spindler.

Editors note: The 1994 departmental photo is the fourth annual group picture. It was taken with a 4 x 5" format view camera. Special thanks to our photographer, Gilbert G. Ahlstrand.

OLD TIMERS (excerpts from letters to the editor)

Wally E. Sackston, PhD 1949. I would have liked to write to thank you for your cooperation and to send you a reprint much earlier of the Craigie biographical memoir published by The Royal Society but the reprints were not sent to me until April. Unfortunately, my wife was hospitalized all of March and is still convalescing, and I have been doing the cooking, bed-making, laundry, etc. I was at home with pneumonia most of March, and can still manage only an hour or two of any activity before having to rest. (The doctor implies that my age has something to do with the slowness of my recovery). As a consequence, I spend only a couple of hours a week in my office, and it takes forever to catch up on correspondence. Late or not, my appreciation is very real. Thanks again, and best wishes.

Bill, PhD 1961, and Betty Kennedy report that they're now fully adjusted to retirement and the desert. They list a variety of pleasures in the Southwest, including sunshine, tropical foods and the outdoors. They have joined refugees and earlier pioneers to share the habitat with others, including a host of diversified landscapes, developers, plants, rocks, animals, politicians, and astronomers. Its a different place (state had a \$300 million plus budget surplus in 1993) and friendly to those who like nature and loafing; you are invited to check up on these environs, centered at 1987 East Singing Bow Way, Tucson, AZ 85737.

Carlos N. Ochoa, MS 1955, recently received two more awards to add to the many honors he has received in the past. They are: Inter-American Agricultural Medal, awarded by the Instituto Interamericano de Cooperacion para la Agricultura (IICA), and the 1994 Alan Shawn Feinstein Award for the Prevention and Reduction of World Hunger, awarded annually by the Trustees of Brown University (USA). The Feinstein Award carries a prize of \$10,000 which Ochoa says he will use to establish a research scholarship for deserving students at the University of Cusco in Peru. Ochoa has won a worldwide reputation for his exploration in the wilds of South America during which he has discovered, described, and named numerous new species of the genus *Solanum* and used some of these to improve the commercial varieties.

Alan R. Pierce, former Scientist in the Department says, "It was 20 years ago this month (August) that I began my 16 year relationship with the Department of Plant Pathology. During those years I made many friends, and through the *Aurora* I want to wish them all well. June 21, 1994 marked one year for me as a psychiatric RN at South Dakota's only state hospital, in Yankton. A new 30 million dollar facility is presently under construction just North of the present site. My wife, Linda, works 3 days per week as a Minnesota licensed psychologist for Southwestern Mental Health Center in Worthington, MN, and 2 days a week in private practice at Anchor Counseling in Sioux Falls. We make about 4 trips per year to the Twin Cities (attending at least one Gopher football game), and about a dozen trips to our Lake Le Homme Dieu home in Alexandria, MN. I value the *Aurora* as an instrument for maintaining at least a historical connection with a former life, and I will be anticipating the arrival of the 1994 issue later this year."

Lawrence I. Miller, PhD 1953, on behalf of the Executive Committee of the Organization of Nematologists of Tropical America (ONTA), Dr. R. N. Inserra, President of ONTA selected Dr. Miller as the recipient of the ONTA Honorary Member Award. This award is given by ONTA to scientists who have made long and outstanding scientific contributions to the organization. The award was presented during the XXVI Annual Meeting of ONTA in Zamorano, Honduras June 20-24, 1994.

Bill H. Livingston, PhD 1985, reports "In June of 1993, my family (Ulrike, Clarissa-5 yr, Amanda-1 yr) began a sabbatical leave in Sweden. Anders Lindstroem (Department of Forest Yield, Swedish Agricultural University, Garpenberg) was our host. We had an apartment in a small village (Stjaernsund) in central Sweden, an area with many forests and lakes. Clarissa attended kindergarten at the village school which got us involved in the local community. My work with Anders involved the effect of warmer autumns on the freezing tolerance in pine and spruce. For Christmas and New Years, we were in Germany visiting Ulrike's family before returning to Maine in early January. What we discovered is that if you like Minnesota, you'll love Sweden!"

Howard L. Bissonnette, MS 1958; PhD 1964, reports "The first announcement for the 3rd annual 'Pea Pickers' convention in Haynes City, Florida, late February 1995. The last 2 conventions at Haynes City were attended by **Ted R.** PhD 1957, and **Lois Reiling** (Green Giant, retired), **Bill A.** MS 1958; PhD 1960, and **Jeanne Haugland** (Mount Vernon, retired), Howard and Karwyn Bissonnette, (Minnesota, retired). There are a few more 'Pea Pickers' out there — where are you? Contact can be made through **Debbie Baden Drange**, Department Administrative Office. No registration fee, no program, no ties, be prepared for old tales and solutions to the major problems of the world."

Craig R. Grau, PhD 1975, continues to serve as Chair of the Department of Plant Pathology, here at Wisconsin and, in spite of his heavy administrative responsibilities, conducts research on soybeans, alfalfa and peas. Following are awards that he has received within the last year or two:

1993 Recognition Award for excellence in service presented by the Agricultural Research Stations, College of Agricultural and Life Sciences, University of Wisconsin-Madison.

1993: Alfalfa Research Award for excellence in alfalfa research endeavors as selected by a committee appointed by the Certified Alfalfa Seed Council—presented at the National Alfalfa Symposium in Appleton, Wisconsin.

1994: The Wisconsin Forage Council presented the Outstanding Researcher Award to him for research and extension efforts relating to disease pressures on forage establishment, production and persistence.

And last, but not least, he is the very proud recipient of the Distinguished Alumnus Award presented to him on May 20, 1994, by the Department of Plant Pathology, University of Minnesota, for distinguished performance as a leader and extension plant pathologist and in developing disease control strategies for alfalfa improvement.

Dr. Ahmed L. Hadidi, MS 1962, of the Department of Agriculture in Beltsville, MD, has been elected Chairman of the International Working Group on Fruit Tree Virus and Virus-like Diseases of the International Society of Horticulture Science for the next three years. The election was held during the 16th International Symposium on Virus and Virus-like Diseases of Temperate Fruit Crops in Rome, Italy, June 27-July 2, 1994. Dr. Hadidi will organize and host the coming symposium in June 1997.

Robert N. Campbell, MS 1954; PhD 1957, reports on the Minnesota Old Timers at University of California—Davis. "**James E. DeVay**, PhD 1953, who was a corn pathologist and former faculty member at Minnesota, transferred to the Department of Plant Pathology at the University of California, Davis, in 1957. **Edward E. Butler**, PhD 1954, who had joined the Department at the University of California, Davis several years earlier, was instrumental in drawing both **Jim DeVay** and **Bob Campbell** to Davis. Over the years, these three Minnesota Old Timers contributed in diverse areas of research and teaching to the strength of the Department which was voted in an NSF survey in the early 1980's as the outstanding department of plant pathology in the United States. The tradition learned at Minnesota of questioning all research and discussing important events at daily coffee breaks is still strong and reflects the lessons learned at the Minnesota Thursday night seminars."

"**Ed Butler**, well known for his probing questions and effectiveness in teaching his favorite subject, mycology, retired in 1990. He maintains his collection of pathogenic fungi and continues his interest in teaching and working with graduate students."

"**Jim DeVay** retired in 1991, but has continued on a daily basis to work with extension personnel and cotton and bean growers on serious disease problems."

"**Bob Campbell**, who has been at Davis since 1959, retired in January, 1993. Bob has continued research on fungal transmission of plant viruses at Davis and internationally. He travelled to Vancouver, B. C. in March 1993 to present a seminar on fungal vectors and to work with cooperators in the laboratory of **Dr. D'Ann Rochon**. He presented a paper at the VIth International Congress of Plant Pathology at Montreal in August 1993. In 1994 he worked in the laboratory of **Dr. H. Lecoq** at Montfavet, France, for six weeks to investigate the role of the fungal vector in seed transmission of melon necrotic spot virus. This study was sponsored by a grant from the Office of International Cooperation and Development, U.S.D.A."

"All three Old Timers have office space and remain active in their Department where they share a research laboratory for emeriti."

Earle E. Hanson, MS 1939; PhD 1942, retired as Professor Emeritus of the University of Wisconsin in 1976. Shortly after he and his wife Maryan began a career as volunteer workers in Oakwood Village, a residence for elderly and handicapped people in Madison, WI. In an article in the Wisconsin State Journal, June 14, 1992 Earle reported "I push wheel chairs and work in the dining hall. During meals I pour their coffee and cut up their meat." Earle and Maryan were trained to set at the bedside of terminally ill patients, which Earle does at Oakwood's nursing home section. The latest report is that Earle is still very active and involved in the volunteer program.

Robert W. Goth, MS 1957; PhD 1961, was awarded Honorary Life Membership in the Potato Association of America at the 77th annual meeting of the Potato Association of America, which was held at Madison Wisconsin on August 8-12, 1993. He was also presented the Seed Researcher of Year Award at the 11th Annual National Potato Council Seed Seminar which was held at Portland, Oregon December 5-7, 1993. Bob has spent his entire professional career as a plant pathologist for the USDA-ARS at the Beltsville Agricultural Research Center. The first 6 years he did research on bean and pea diseases. Since 1967 his research has been on potato diseases where most of his efforts have been devoted to improving disease resistance of potato germplasm.

Allan Newhall, BS 1918, turned 100 years old on July 20, 1994. Newhall was an Assistant State Leader on the barberry campaign in which E. M. Freeman was the leader. He went on to become a graduate student at Cornell when Stakman recommended him to H. H. Whetzel for an assistantship financed by commercial funds. In the *Rotary News*, Rotary Club of Ithaca, New York, Vol. 80, No. 4 issue **Beverly Barker** announced a special Paul Harris Fellow for Allan Newhall who is 100 years young today (7/20/94). **Carl Boothroyd** accepted for Professor Newhall who was unable to attend today's meeting. Mr. Boothroyd reported that Professor Newhall has never stopped learning. He learned to skateboard in his 80s, and learned to bake bread at 90. In recognition of Professor Newhall's contribution to the community, **Mayor Ben Nichols** proclaimed today "Allan Newhall Day" in the City of Ithaca. Al Newhall is at the Oak Hill Manor, 302 Hudson Street, Ithaca, NY 14850. He would appreciate cards from Minnesotans.

Carl J. Eide, MS 1929; PhD 1934, says the news of Earle and Maryan Hanson was interesting to me as I have been immobilized for a couple of years by neurological degeneration. I can walk with the aid of a cane but tire very easily. I live at home cared for by my wife Johanna. Our sons David and Charlie do many things she can't manage. One of my principal troubles is loneliness, but people from the Plant Pathology Department come in Wednesday mornings with coffee and goodies. They can't stay long, but frequently others come at odd times and make longer visits. What a blessing those visits are. I want those people to know that I appreciate them more than I can tell.

VISITORS — 1993

Ohio-born **Richard S. Davidson**, PhD 1947, and wife Ruth visited the Department on September 27. Dick did his graduate thesis under Dr. Eide on bacterial soft rot of potato. He also worked on the penicillin project with Clyde Christensen. Ruth had worked as a secretary in biochemistry. Upon graduation, Dick went first to Ohio State University (Wooster), then Alabama Polytech, but most of his career was at Battelle Memorial Institute in Columbus, Ohio, where he was Director of Biological Programs until he retired. His office as a graduate student was Room 402, Stakman Hall.

Linda L. Kinkel presented a seminar at the University of Wisconsin — Superior, in the Biology Department, on the topic of "Biocontrol of Plant Diseases," on November 18. This led to interest of one student wanting to visit the Department during the Holiday Season as a prospective graduate student for next year.

1994

German P. Hoyos, PhD 1990, visited the Department January 10-23. Dr. Hoyos is currently employed at the *Soil and Plant Laboratory de Colombia Inc.*, in Bogota, Colombia. Neil Anderson served as German's advisor for his doctorate. German is meeting several faculty members on special problems in plant pathology.

Zahra Ferji, MS 1988, visited the Department January 8-12. Zahra is currently employed at the Institut Agronomique et Vétérinaire Hassan II in Agadir (Complex Horticulture), Morocco. She is a nematologist working on banana, cucurbits, rose, and tomato, and she teaches a course on introductory plant pathology and one on nematology, in addition to leading pathology field trips for students. She attended a short course at Clemson on identification of nematodes (December 29, 1993-January 7, 1994).

Gene E. Saari, MS 1962; PhD 1966, visited the Department January 27-28 to attend Roelf's retirement events. Gene is completing 4 years at CIMMYT in Mexico and will transfer to Katmandu, Nepal in August to handle the regional office headquartered there. Gene was a student of Matt Moore for his doctorate.

Michael J. Wingfield, PhD 1983, (forest pathology with Dave French and Bob Blanchette as co-advisers), currently at the University Orange Free State, in Bloemfontein, South Africa, visited the Department February 4-7 with his wife Brenda. Both Mike and Brenda (a molecular biologist) are on sabbatical leave at Iowa State University in Ames. Mike is currently vice-president of the International Society for Plant Pathology (1993-98).

Old Timer **John M. Kraft**, MS 1962, is currently in Prosser, Washington, working on pea diseases and in charge of the USDA program at the station. John directs the work of eight scientists and two post-doctoral programs. At Minnesota, he worked on flax problems with Thor Kommedahl and Al Linck, and also on storage fungi with Clyde Christensen. He visited the Department February 14 and is on his way to a canners and freezers meeting in LaCrosse, Wisconsin. His PhD degree was earned at the University of California, Riverside, in 1966.

Old Timer **Craig R. Grau**, PhD 1975, Chair of the Department of Plant Pathology at the University of Wisconsin, spent 2 days (February 17-18) in the Department, being involved on Dean Malvick's committee. Craig was a teaching assistant with Matt Moore and a doctoral advisee of Thor Kommedahl.

Dr. Shih-I Lu, MS 1950; PhD 1952, visited the Department February 28, after visiting his son who was a student at Minnesota and now has a postdoctorate at MIT. Dr. Lu worked on variation in corn smut for his doctoral thesis. Although officially retired, Dr. Lu is still working at the World Academy of Production Science, China Chapter on pharmaceutical compounds present in mushrooms. His home is in Beijing, China.

Old Timer and APS Fellow **John H. Hill**, MS 1966, currently professor at Iowa State University, Ames, visited the Department on March 15. John earned his PhD degree at the University of California, Davis. He is an authority on soybean mosaic and barley yellow dwarf viruses. He and associates pioneered the use of signature analysis in plant pathogen diagnosis.

Linda M. Treeful, PhD 1988 currently living in St. Paul and working as Plant Pathologist/Consultant, as well as horticulturist for the City of Falcon Heights, checked in the Department for information and inspiration, on March 16.

Norman E. Borlaug, MS 1941; PhD 1942 was on campus for University of Minnesota Foundation activities in the College of Agriculture on March 17 and visited with Dr. Philip Larsen.

Professor H.-J. Jäger and Dr. L. Grünhage, from the Institute of Plant Ecology, University of Giessen, Germany, visited **Sagar V. Krupa** on May 5-6 for consultation regarding their ongoing cooperative research on past, present and predicted global climate changes and their effects on a natural grassland ecosystem in Germany. On May 7, all three left for Orlando, Florida, to participate in an international conference on ozone. Dann Adair and Dr. Clive Reece (Soil Science) are also involved in this research project and were also in Germany last summer to start the research. A similar cooperative project was set up on climate change effects on a chaparral ecosystem with ecologists at the Carbon Dioxide Research Center of San Diego State University, in California.

Old Timer **Jeri J. Ooka**, PhD 1975, plant pathologist at the University of Hawaii, Kauai Branch Station, visited the Department Tuesday, June 21. Jeri is on his way to the Ohio Agricultural Research and Development Center, Wooster, for a sabbatical with Harry Hoitink. His doctoral adviser at Minnesota was Thor Kommedahl and his thesis was on corn stalk rot.

CORRESPONDENCE

Dr. Craig R. Grau, PhD 1975, Professor and Chair, Department of Plant Pathology, University of Wisconsin—Madison, Madison, WI, wrote to thank the Department for his receipt of the *Distinguished Alumnus Award* from the Department. "I wish to express my deepest gratitude for being honored with the Distinguished Alumnus Award for 1994. The plaque is beautiful. It is difficult for me to adequately put into words the emotions I have experienced after receiving this honor. I am proud to be a graduate of the Department of Plant Pathology, University of Minnesota. I had many wonderful experiences and opportunities at Minnesota which collectively prepared me to compete and survive. I learned how to think on my feet, react to the unexpected, be independent, yet appreciate the value and power of team work, and was presented a broad perspective of Plant Pathology. I cannot help but chuckle when I hear young colleagues talk about how we must broaden our views of Plant Pathology and insert more biology into this discipline. This was being done at Minnesota 23 years ago! Again, I am deeply honored by this recognition. Thank you."

OBITUARIES

Betty (Smart) McLaughlin reported that her aunt Myra Smart had died in September 1993. Myra was a student in horticulture but was employed by several faculty members in plant pathology during the 1950s and 1960s. She lived in Pullman, Washington, prior to her death.

Old Timer Savel **B. Silverborg**, PhD 1947, died at age 80. Savel, known by his associates as "Sam", graduated from Minnesota as a forest pathologist and then worked on the Firestone Project on growth and survival of *Phytophthora palmivora*. After graduation he became professor of forest pathology and forest botany at the State University of New York at Syracuse. He was known for his work on diseases of *Hevea brasiliensis* (rubber tree), forest plantation diseases, and wood decay of buildings. Condolences can be sent to Doris Silverborg, 6676 Colton Road, Lafayette, NY 13081; 315/677-3780.

Shan-Ming Chen, MS 1940; PhD 1943, former director, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, died in July, age 85 (?). Dr. Chen spent 9 years in Minnesota. Chen is considered a pioneer in wheat rust research in China.

J. Lewis Allison, PhD 1940, died March 24, 1994. Lew, a native of Montana had a BS in Botany from Montana State University and MS in Botany from Washington State University prior to coming to Minnesota. From 1940-57 he was a plant pathologist with ARS-USDA at the University of Wisconsin, Beltsville, Maryland and North Carolina State University. For a year during this period (1952-53) he was on loan to FAO-UN in Iraq. From 1957-69 he was Director of the Farm Seed Research Corporation in California. During this period he was on a contract assignment for the Ministry of Agriculture, Saudi Arabia as chief agriculturist for eighteen months. From 1969 until his retirement at the end of 1975, he was superintendent and Professor of Plant Pathology at the Washington State University Research and Extension Center, Prosser, Washington. Since retiring he and Mrs. Allison lived for several years in Arizona but in recent years moved back to the state of Washington. Lew was 82 at the time of his death. He is survived by his wife, 2 children and 3 grandchildren. - Evelyn Allison (Mrs. J. Lewis)

Camille Leon Lefebvre, BS 1929, died October 23, 1993 at 88 years of age. Cam a native of Ostego in Wright County, Minnesota went on to pursue a MS in 1931 and a PhD in 1932 in Biology from Harvard University. In the fall of 1932 he obtained the position of Assistant Professor of Botany at Kansas State University in Manhattan, Kansas. While at Kansas State, he married Marjorie Waite. In 1937 he took a job as a Plant Pathologist with the United States Department of Agriculture, Division of Forage Crops and Diseases in Beltsville, Maryland. Cam stayed with the U.S. Department of Agriculture in Washington, D.C. for some 36 years. In May 1963, Secretary of Agriculture, Orville Freeman, presented Cam with an Award for Superior Service. In 1965, after the death of his first wife Marjorie, he married Wanda Sarnecki. In 1970, Cam retired as Director, Plant Science Program, Cooperative State Research Service. In 1979, Cam and Wanda moved from Bethesda, Maryland to Tropicana Circle in Sun City and have enjoyed life in the sun ever since. Cam was a member of many organizations and societies — The Cosmos Club, American Phytopathological Society, The American Type Culture Collection, American Institute of Biological Sciences, but none of these was closer to his heart than the Sun City Rose and Garden Club. Cam is survived by his wife, Wanda.

Eide Celebrated 90th Birthday August 20, 1994

Two individuals from the department office, one staff member and some faculty from St. Paul and Crookston, celebrated Carl Eide's birthday with coffee and cake on August 24 at his home. Those who have visited Carl and Johanna can attest to their appreciation of the weekly visits to their home for coffee.

Are We Doctors of Philosophy or Not?

If it were not for diseases and insects would trees be immortal, that is, exempt from death? If leaves fall off the tree and die, is the tree then not immortal any more? If the bark dies, but the tree lives on, is it immortal? What has to die to enable one to classify a tree as mortal? Can dogs cause trees to lose their immortality? Is their bark [dogs' or trees'] worse than their blight [trees']? Are words immortal because they are printed on paper made from tree pulp derived from trees that would have been immortal if they had not been harvested? Are these not philosophical questions for doctors of philosophy? - Thor Kommedahl

Old Timers Publish Books in APS Press

The recent issue of "New From APS Press" provides an interesting list of publications by Department Old Timers (persons underlined below).

Christensen, C. M. 1984. *E. C. Stakman, Statesman of Science*.

Bromfield, K.A. 1984. *Soybean Rust*.

Evans, T. A., Schumann, G. L., and Tainter, F. H. 1994. *A Plant Disease Video Image Resource*.

Groth, J. V., and Bushnell, W. R. 1985. *Genetic Basis of Biochemical Mechanisms of Plant Disease*.

Kommedahl, T., and Williams, P. H. 1983. *Challenging Problems in Plant Health*.

Manion, P. D., and Lachance, D. 1992. *Forest Decline Concepts*.

Mc Gee, D. C. 1988. *Maize Diseases: A Reference Source for Seed Technologists*.

Mc Gee, D. C. 1992. *Soybean Diseases: A Reference Source for Seed Technologists*.

Nyvall, R. F. (Ed.) 1994. *International Resources in Plant Pathology*.

Pfleger, F. L., and Linderman, R. G. 1994. *Mycorrhizae and Plant Health*.

Rossman, A. Y., Palm, M. E., and Spielman, L. J. 1987. *A Literature Guide for the Identification of Plant Pathogenic Fungi*.

Singleton, L. L., Mihail, J. D., and Rush, C. M. 1992. *Methods for Research on Soilborne Phytopathogenic Fungi*.

Teng, P. S. 1987. *Crop Loss Assessment and Pest Management*.

Wyllie, T. D., and Scott, D. H. 1988. *Soybean Diseases of the North Central Region*.

Windels, C. E., and Lindow, S. E. 1985. *Biological Control on the Phylloplane*.

Wingfield, M. J. 1987. *Pathogenicity of the Pine Wood Nematode*.

Wingfield, M. J., Seifert, K. A., and Webber, J. F. 1993. *Ceratocystis and Ophiostoma: Taxonomy, Ecology and Pathogenicity*.
- Roy D. Wilcoxson

University of Minnesota Hosts Symposium, "Cloning Plant Genes Known Only by Phenotype"

In May, 1994, the Plant Molecular Genetics Institute of the University of Minnesota hosted a symposium to explore new and exciting strategies for cloning plant genes. The symposium was organized and chaired by Dr. Nevin Young, a faculty member in the Plant Pathology Department. Nearly 200 scientists from the U.S. and around the world attended. Among the speakers was Dr. Greg Martin of Purdue University, who recently led the successful effort to clone a plant disease resistance gene (*Pto* in tomato). Because of the timely nature of the symposium, a meeting summary was recently published in the prestigious journal, *The Plant Cell*.

Cloning plant genes known only by phenotype seemed like a dream only a decade ago. Now it has become a practical, though demanding, experimental challenge. At the symposium, experts presented several approaches to cloning plant genes, including the use of T-DNA insertion, transposon tagging, positional cloning, REMI (Restriction Enzyme Mediated Integration), site-specific recombination for *in vitro* chromosome cleavage, targeted restriction fragment length polymorphism (RFLP) subtraction, and yeast artificial chromosomes. While the meeting focused on plants, biological systems ranging all the way from maize, tomato, and *Arabidopsis* to mice, *Volvox*, and *Dictyostelium* were presented.

The symposium illustrated the usefulness of different techniques for cloning plant genes, as well as the phenomenal amount of information that can result from successful gene cloning. The meeting emphasized the necessity of understanding the biology of the organism, the value of mutants, and the need to match the cloning strategy with the gene of interest. Increasingly, cloning plant genes will yield key insights on genome organization, as well as the organismal, developmental and cellular biology of plants.
- Nevin D. Young

More Than 1000 Abstracts Published by the Department Between 1911 and 1992

Between 1911 and 1992 the department has published 1022 abstracts in Phytopathology and international congresses. This was done by 650 persons from the department's faculty and students. The first abstract was by E. C. Stakman on cereal smut spore germination. Abstracts have been published annually by the department since 1911 except for 1912, 1913, 1915, 1919, 1928, 1937, 1945, and 1958. None were published in 1945 because of the Second World War and in 1958 because of the Golden Jubilee Year of the Society.

The number of abstracts published between 1911 and 1944 varied from 1 to 6 per year except for 1922, 1932, 1935, and 1938 when 11, 10, 10 and 14, respectively, were published. The number published between 1946 and 1972 ranged from 7 to 24 per year with a mean of 14. Between 1973 and 1992 the number ranged from 12 to 44 per year with a mean of 27 per year.

The following is a summary of the subject matter of the published abstracts.

Subject	No. of Abstrs	Subject	No. of Abstrs
Plant Species	83	Pathogen Genera	108
Crops		Crops	
Alfalfa	22	Pea	21
Aspen	10	Pine	40
Barley	61	Potato	48
Bean	37	Soybean	61
Corn	61	Spruce	14
Elm	10	Sugarbeet	18
Flax	26	Wheat	140
Oat	25	Wild rice	15
Pathogens	905	Mycoplasma	6
Bacteria	66	Nematodes	19
Pseudomonas	36	Viruses	57
Parasitic Plants	11	oat blue dwarf	12
Fungi	746	Fungi	
Aphanomyces	12	Hypoxyton	12
Ceratocystis	12	Phytophthora	12
Erysiphe	18	Rhizoctonia	27
Fusarium	101	Septoria	13

Helmintho- sporium/ Bipolaris	31	Verticillium	10
Rusts		Smuts	
Uromyces	32	Sorosporium	2
Cronartium	4	Sphacelothecia	11
Melampsora	8	Tilletia	2
Gymnoconia	1	Urocystis	2
Peridermium	1	Ustilago	46
Puccinia	204		
Subject Matter		Subject Matter	
Air Pollution	18	Grain Storage	31
Biocontrol	25	Host Pathogen	
Ecology Pathogens	88	Relationships	33
Epidemiology	60	Insects & Disease	38
Fertilizers		Physiologic	
& Disease	8	Specialization	32
Fungicides	64	Physiology	
Genetics Pathogens	70	of Pathogens	118
Genetics of		Physiology	
Resistance	18	Diseased Plants	46
Virulence	41	Resistance	82
		Techniques	81

- Roy D. Wilcoxson

Ten Reasons for Becoming a Plant Pathologist

10. The pay is better than working at McDonalds.
9. One can work with mistletoe at times other than Christmas.
8. One can know more and more about less and less by degrees.
7. One can work with sexual stages in fungi and sex is fun.
6. One can get to work in the field and be out standing there.
5. If one can't be outstanding, there are always administration jobs.
4. One can work with smut and be respectable.
3. One can handle rotten roots, fruits and wood, and be happy.
2. One can observe leaves, see spots, and still pass sobriety tests.
1. One can get a job, then get graduate students or post-docs to do the work. - Thor Kommedahl

RECEPTION FOR DR. PHILIP O. LARSEN

A reception for Dr. Philip Larsen and his wife, Sandy, was held in the Cherrywood Room, St. Paul Campus Student Center on July 7, 1994. About one hundred friends, associates and daughter Amanda attended to celebrate Phil's nine years as department head and to thank Phil and Sandy personally. Dr. Chester Mirocha was master of ceremonies of the program to recognize Dr. Larsen's accomplishments and wish him well in his new ventures. Bob Noyd presented Dr. Larsen with a custom-designed Plant Pathology sweat shirt on behalf of the Graduate Students. The traditional departmental cap and cup was presented by Dann Adair who represented the support staff. Representing the Academic Professional Staff, Cindy Ash presented Dr. Larsen with a plaque and on behalf of the Faculty, Dr. Mirocha presented an album of photos of various activities and events during Dr. Larsen's years as department head. Steve Nelson, Executive Vice President of the American Phytopathological Society, presented an APS t-shirt. Finally, Dr. Richard Jones, Dean of the College of Agriculture, thanked Dr. Larsen and commended him for the vision and excellent leadership he provided, not only in the department, but also in the college.

The plaque Dr. Larsen received was symbolic of the appreciation and high regards shown to him for his years of service as department head. The inscription read:

Presented to Philip O. Larsen
 In Recognition of the Caring, Patience and Kindness
 You Showed in Leading
 The Faculty, Staff and Students of Plant Pathology
 As Department Head.
 We Thank You for All of Your Contributions and
 Efforts

Dr. Larsen responded with his sincere appreciation and expressed his thanks to all for the support given to him while he served as Department Head.

Dr. Larsen remains in the Department as a Professor and is on an administrative leave for one year. He is serving as Project Director of The Food Systems Professions Education Initiative, a project funded by a grant awarded to the College of Agriculture by W.K. Kellogg Foundation. He is also serving as Coordinator of a research initiative on wheat and barley scab for the Minnesota Agricultural Experiment Station that is being supported by funds from the Minnesota Legislature.

- Delores Huebner

VITAL STATISTICS

Births

August 21, 1993. Jacob James Foster Aronson to James and Andree Aronson, 8 lbs. 7 oz. 21.5 inches long.

October 20, 1993. Crystal Ting Deng to Zhigang and Wenlian Deng, 6 lb. 12 oz.

January 27, 1994. Nathaniel Scott Kinkel Andersen to David Andersen and Linda Kinkel, 8.45 lb. 22.5 inches long.

February 26, 1994. Matthew Alan McCullough to Bryan and Jan McCullough, 8 lbs. 5 oz. 19.8 inches long.

February 28, 1994. Joseph Wendong Xin to Zhanguo Xin and Junping Chen, 7 lb. 8 oz. 20.0 inches long.

May 10, 1994. Jacob Hunter to Nicole Perala, 9 lb. 4 oz. 20.5 inches long.

July 14, 1994. Sayed Mustafa Nicholas Zweighardt to Robert Zweighardt and Mervat ElAraby, 7 lb in Egypt.

July 15, 1994. Adam Arthur Wilbur to Russell and Pamela (Huebner) Wilbur, 9 lb 6 oz 21 inches long. Delores and Warren Huebner became proud grandparents when their daughter Pamela gave birth.

Marriages

June 6, 1994. Martha Nyvall (daughter of Robert Nyvall) and Christopher Erickson in Grand Rapids, MN.

June 11, 1994. Elwin Stewart and Barbara Christ in Rock Springs, Pennsylvania.

Professors Peddle Popular Pabulum Poignantly

Plant Pathology Professors prescribe pathogen protection, patter patiently, pause persuasively, produce panaceas, peruse philosophies, palaver pensively, personify particular points-of-view, pursue particulars, publish papers, pioneer projects, pungently perturb phony protagonists, and provide perceptive profound, paradoxical principles and procedures—that's what professors do.

VISITING SCIENTISTS

Dr. Yehoshua Anikster was here from Fall 1993 through July 1994 on a sabbatical leave following several years as Director of the Institute for Cereal Crops Improvement, Tel Aviv University, Israel. He worked in Dr. William Bushnell's Laboratory on a project to characterize chromosomes of rust fungi by light and electron microscopy.

Dr. Mohamed Besri from the Institute Agronomique et Veterinaire Hassan II, Rabat-Institute, Morocco visited the Department July 19 - 23, 1993. He met with several faculty in the Department and Cereal Rust Laboratory to discuss ways to continue our collaboration.

Dr. Pieter Cronjé is a plant pathologist at the South African Sugar Association Experiment Station at Mount Edgecumbe, Natal. He works with virus diseases of sugarcane and collaborates with plant breeders in breeding of new sugarcane varieties. He is spending the period August 1 - November 25, 1994 in Dr. Benham Lockhart's Laboratory. The purpose of his visit is to become familiar with recent developments in techniques for plant virus identification and to work on two new viruses of sugarcane.

Dr. Tamar Eilam, a researcher from Dr. Y. Anikster's laboratory, Institute for Cereal Crops Improvement, Tel Aviv University, Israel, visited the Department July 11 - August 5, 1994. She worked in Dr. William Bushnell's laboratory on imaging analysis of rust fungus nuclei stained for DNA.

Mr. Henryk H. Jeleń from Institute of Food Technology of Plant Origin, University of Agriculture, Poznan, Poland arrived September 1, 1994 to spend a year in Dr. Chester Mirocha's laboratory studying fusariotoxins analysis. He will be analyzing samples of wheat, barley and oats infected with *Fusarium* head blight for deoxynivalenol (DON). He has been working on a Ph.D. thesis entitled "Volatile Metabolites Characteristic for Toxigenic *Fusaria* Strains".

Mr. Chang-Cheng (Charles) Hu joined the Cereal Rust Laboratory March 15, 1993, to collaborate with Dr. Alan Roelfs on a project to study evolution of leaf and stem rusts. In 1994 he has been working with Dr. Ruth Dill-Macky on the wheat scab project. He holds an MS degree from the University New Hampshire and comes to us from the Chinese Academy of Agricultural Science, Beijing, People's Republic of China.

Dr. Xinyi Liu and colleagues, Dao Fei, Detian He and Baljin Li of the Institute of Plant Protection, Hebei Academy of Agriculture and Forestry Sciences, People's Republic of China visited the Department September 23, 24, 1993. The delegation visited to exchange information on soilborne diseases, plant disease diagnostics and plant pathology research, in general. Ms. Junping Chen and Dr. Daqun Liu served as interpreters during their visit.

Professor Yong Hwan Park arrived in November 1993 to spend a year in Dr. Nevin Young's laboratory studying and doing research on plant gene mapping. He is a research scientist at the Agricultural Biotechnology Institute, Rural Development Administration, Suweon, Korea.

Ms. Johanne Schjøth is a PhD student in Plant Pathology studying under Dr. Leif Sundheim, PhD 1964, from Ås, Norway near Oslo. She hold a MS degree from Norges Landbrukshøgskole, Ås, Norway. Johanne is working in Dr. Chester Mirocha's laboratory, studying the occurrence of fumonisin in corn grown in Zambia and learning analytical techniques in the analysis of fumonisin by HPLC. She arrived in August 1994 and will return to Norway in one year.

Dr. Huang Yicun of the Institute of Microbiology, Chinese Academy of Sciences, Beijing, People's Republic of China was a visiting scientist February 1, 1994 through July 31, 1994. He studied and conducted mycorrhizal research on Dr. Neil Anderson's project on *Laccaria*. He also worked on the molecular genetics of mating type genes in Dr. Georgianna Maye's laboratory in the College of Biological Sciences.

Dr. Hirofumi Yoshioka, Assistant Professor of Plant Pathology at Nagoya University, Japan, arrived in late August 1994. He is working in Dr. Richard Zeyen's laboratory on localization of plant defense response genes relative to powdery mildew. He will also work with Dr. William Bushnell (Cereal Rust Laboratory) and with Alan Smith (Horticulture). Later, Dr. Yoshioka will work with Dr. Carroll Vance (Agronomy) on localization of *Rhizobium* nodulation genes in alfalfa.

- Delores Huebner

VISITING SCIENTISTS



Dr. Pieter Cronjé



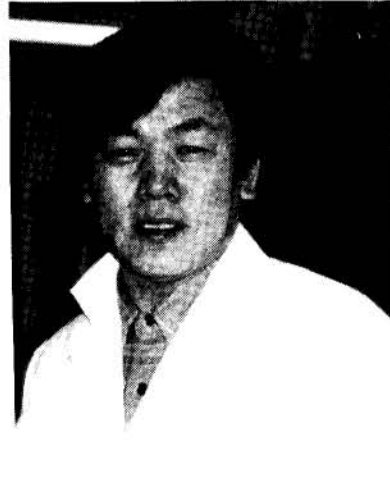
Dr. Tamar Eilam



Mr. Henryk H. Jeleń



Mr. Chang-Cheng (Charles) Hu



Professor Yong Hwan Park



Ms. Johanne Schjøth



Dr. Hirofumi Yoshioka

HONORS

David W. French received the William B. Greeley Award from American Forests (American Forestry Association) on September 15, 1993. The annual award was presented in a plaque to Dr. French for his sterling contributions to forest science. He was cited for his nearly 300 papers; for his work on Dutch elm disease, oak wilt and dwarf mistletoe; and as co-founder of the American Chestnut Association; but especially for his lifelong efforts in guiding and educating citizens and citizen groups on the preservation of urban and community forests. The William B. Greeley Award is given to a person who has made major contributions to forest conservation in the area or region in which that person lives and works.

Kasia Duellman was awarded the Carolyn M. Crosby Fellowship for 1994 from the Graduate School to enable her to continue work towards a graduate degree.

Dr. Robert W. Goth, MS 1957, PhD 1961 from our Department, was presented the "North American Seed Potato Researcher of the Year" award at its '93 seed seminar in Portland, OR. He also was given the Potato Association of America Honorary Life Member Award at the 77th Annual Meeting of the PAA, Madison, WI. Dr. Goth, a research plant pathologist with the Vegetable Laboratory, U.S. Department of Agriculture was recognized for his work in disease testing and participation in the development of several Beltsville variety releases. In addition he developed NemaRus, the first long russet potato with golden nematode resistance. Dr. Goth has assisted seed certification programs in several states in virus detection and identification. * He is cooperating with Dr. Kathleen Haynes in developing new ways to evaluate disease resistance in laboratory and field plot tests with emphasis on late blight, scab, Verticillium wilt, pinkeye, bacterial wilt, and corky ring spot.

Thor Kommedahl was a recipient of an Award of Merit, at the annual banquet of Gamma Sigma Delta, the Honor Society of Agriculture, on April 21, 1994. Awardees from the Department before Kommedahl were E.C. Stakman, Helen Hart, C.M. Christensen, J.J. Christensen, Carl J. Eide, J.B. Rowell, F.I. Frosheiser, D.D. Skilling, and David W. French.

George Hudler, MS 1973, received the "Innovative Teacher Award" from the College of Agriculture and Life Sciences at the Dean's Awards Convocation April 26, 1994, Cornell University, Ithaca, NY.

Robert Kroll, MS 1957, PhD 1961 from our Department, received the George G. Marra Award of Excellence June 26, 1994. The award is given for excellence in research and writing exhibited in *Wood and Fiber Science*, by The Society of Wood Science and Technology in memory of George G. Marra's dedication to excellence. Dr. Kroll was recognized for his work "Zones of gelatinous fibers in *Populus balsamifera* L., Volume 25, Number 2. Dr. Kroll is a Research Associate, Department of Forest Resources, University of Minnesota.

Kathryn Kromroy won the Alexander P. and Lydia Anderson Fellowship for 1994-95 to enable her to complete her research for the doctoral degree. She also was awarded the Carolyn M. Crosby Fellowship for 1994-95 from the Graduate School for her research on Armillaria root rot.

James Rowe, James Karelis, and Kimon Karelis (Plant Pathology Unit) were awarded the 1993 Outstanding Unit Award from the fellow Rosemount employees for being a highly valued unit at the Rosemount Agricultural Experiment Station.

Carol Windels was awarded the North Central Division's Distinguished Service Award at its annual meeting held in Albuquerque, NM, in August 1994. Carol had served the Division as its secretary-treasurer (1987-1990). Her other activities included Councilor-at-Large on the APS Council for 3 years, associate editor for 3 different journals, member or chair of at least 5 APS committees, as well as service to the International Society for Plant Pathology. - Delores Huebner

1994 DEPARTMENTAL AWARDS & RECOGNITION CEREMONY

The eight annual Department of Plant Pathology Awards Ceremony was held May 20, 1994 in Borlaug Hall. Dr. Philip Larsen presided over the ceremonies. He expressed the importance of setting aside time to celebrate and appreciate all of the excellent students, faculty and staff who work in the Department. It is also a time to recognize the accomplishments of those who have distinguished themselves, including friends and alumni of the Department. Dr. Larsen presented the following awards:

M.F. Kernkamp Scholarship	Jean Williams
Fred I. Frosheiser Scholarship	Brent McCallum
Civil Service Award of Excellence	Debra Baden Drange Todd Burnes
Distinguished Mentor Award	Dr. Philip O. Larsen (Awarded by the Graduate Students)
Distinguished Alumnus	Dr. Craig R. Grau
Distinguished Friend of the Department	Dr. Piotr Golinski

During the ceremony Dr. Larsen also recognized individuals who have received various honors and recognitions during the past year. Those recognized included:

- Dr. Neil Anderson**, Patent #PPO 8488, Canker Resistant Aspen Tree, December 7, 1993.
- David Casper**, USDA Superior Performance Award, July 1993.
- Kasia Duellman**, 1994 Carolyn M. Crosby Fellowship, Graduate School.
- Dr. David W. French**, William B. Greeley Award, American Forestry Association, September 15, 1993.
- Dean Herzfeld**, Citation for Programming Excellence in Natural Resources for 1993, Minnesota Association of Extension Agents.
- Mark Hughes**, USDA Outstanding Performance Award, May 1993.
- Dr. Roger Jones**, 1993 Award for Outstanding Extension Work, Minnesota Wheat Growers.
- Dr. Roger Jones**, Extension Educator Award, Agri-pro Seeds.
- Dr. Thor Kommedahl**, 1993 Distinguished Service Award, North Central Division American Phytopathological Society.
- Dr. Thor Kommedahl**, Congratulations for Completing 10 years of Outstanding Service as Editor of the International Newsletter on Plant Pathology.

Kathy Kromroy, Alexander P. and Lydia Anderson Fellowship for 1994-95.

Dr. Ben Lockhart, Award (Medal) presented by the Institut Agronomique Hassan II, Morocco, in recognition of contributions during 1971-1993.

David Long, USDA Superior Performance Award, July 1993.

Dr. James Percich, Succeeded from Vice-President to President, North Central Division, American Phytopathological Society, June 1993.

Dr. Sanjaya Rajaram, 1993 E. C. Stakman Award.

Dr. Richard Zeyen, Underwood Foundation Fellow, Agriculture and Food Research Council of the United Kingdom, 1993.

1994 Nominees to Sigma Xi, The Scientific Research Society

Full Member: Junping Chen

PEPP Committee Certification of Appreciation - 1993

Dann Adair

Odette Holter

Delores Huebner

James Patrick Martinez

Liz Ozmon

Civil Service Length of Service Recognition

Connie Post, 20 years

Following the ceremony a group picture was taken in front of Borlaug Hall. Awardees were honored and congratulated at a reception with a variety of delicious food and refreshments. - *Delores Huebner*

DEPARTURES

We bid **Dr. Timothy Clark** farewell at a tea November 23, 1993 in the Old Seminar Room in Stakman Hall. Tim completed his PhD and accepted a position at The Samuel Roberts Noble Foundation, Ardmore, OK.

Javier Plasencia successfully defended his doctoral thesis on January 19, 1994 and a Farewell Tea was held for him February 1, 1994. He returned to Mexico to work at Facultad de Quimica, UNAM, Department of Bioquimica, Ciudad Universitaria.

Cindy Herrick resigned as Accounts Specialist in February 1994 to stay home and take care of a newly adopted child.

Connie Post resigned as Senior Accountant after 20 years of service in the Department. She transferred to her new position with the University of Minnesota Sea Grant Program May 31, 1994.

Paul Zambino (MS 1984) left the Cereal Rust Laboratory June 13, 1994 for a postdoctorate for the USDA Forest Service in Rhinelander, WI. He will work on white pine blister rust.

Dr. Piotr Golinski, who spent a year here studying, left the Department in June 1994 to return to his home in Poland. He worked in Dr. Mirocha's laboratory on the Analysis of Saxitoxin in Rat Urine Project. A farewell tea was held for Piotr June 20, 1994.

A farewell tea was held for **Jerry Amundson** August 30, 1994. While in the Department, Jerry did computer programming for the Minnesota Plant Pest Survey for several years and served as our computer support person and network manager this past year. He accepted a programming job in the Research Department at Group Health.

Sam Boutin was the guest at a farewell tea August 25, 1994. Sam desires to become a veterinarian and has enrolled as a student in the College of Veterinary Medicine at the University of Minnesota.

- *Delores Huebner*

Seed and Greenhouse Management is Not a Mickey Mouse Operation

There is a mouse crisis in the Crops Service Building! Spilled seed should be swept up and removed immediately! The Lumina and the Pontiac should be parked in their designated spots! Please turn in greenhouse requests pronto! Store pesticides in the appropriate places! Bugs are taking over the greenhouse—Let us Spray! These and other headlines in the Plant Pathology Newsletter remind us of operations necessary for teaching and research—and Dann Adair is at the bottom of this call to alarms, although he keeps on top by his regularly sounding the call to us faculty and graduate students alike. So, while faculty wrestle with projects, budgets, lectures and experimental protocol, the mice are ravaging the seed house. And there seem to be enough Minnies for all the Mickeys to keep the population at a survival level, and then some.



RETIREMENT

Professor Alan Roelfs Retires

Dr. Alan P. Roelfs retired on January 2, 1994, after 32 years with the U.S. Department of Agriculture and 23 years in the Department of Plant Pathology at the University of Minnesota. Dr. Roelfs was honored at a retirement reception in the Cherrywood Room of the St. Paul Campus Student Center on January 28, 1994. Before the reception, Dr. Roelfs presented a lecture on "Wheat Leaf Rust, the Present and the Future," in which he summarized his recent research indicating that leaf rusts of wheat and related grasses are a complex group that can be subdivided into several genetically and biologically distinct types. He expects to explore several interesting questions raised by this research in his free time after retirement.

Dr. Roelfs was born in Stockton, Kansas on November 18, 1936. He received his B.S. and M.S.

degrees from Kansas State University in 1959 and 1964. As a graduate student at Kansas State, he also worked as a research technician for the USDA Agricultural Research Service. In 1966, Alan accepted a position as Plant Pathologist with the USDA Animal and Plant Health Inspection Service in the Cereal Rust Laboratory. At the same time, he enrolled as a Ph.D. student in the Plant Pathology Department at the University of Minnesota. When Dr. Roelfs received his Ph.D. in 1970, he was promoted to the position of USDA-ARS Research Plant Pathologist at the Cereal Rust Laboratory, and he became an adjunct member of the faculty of Department of Plant Pathology. Dr. Roelfs continued his career at the Cereal Rust Laboratory from 1970 through 1993, serving as Acting Director in 1981. In addition to his USDA research assignment, Dr. Roelfs participated enthusiastically in teaching, committee work, and other activities in the Department of Plant Pathology. During his career, he guided 11 M.S. and 3 Ph.D. students through their degree programs in Plant Pathology at Minnesota, and he currently serves as advisor for 5 Ph.D. students.

Dr. Roelfs devoted his career to understanding cereal rust diseases, particularly wheat stem rust and wheat leaf rust. His vast experience in rust surveys served as a foundation for his important contributions to epidemiology of rust diseases and to understanding complex interactions between resistant varieties of small grains and pathogenic races of rust fungi. His research with James Groth and other colleagues led to major advances in the study of population genetics of plant pathogens, culminating in their classic work on population structure of the wheat stem rust fungus in the Great Plains. Dr. Roelfs has published over 100 papers in refereed journals as well as numerous book chapters and other publications. With Bill Bushnell, he co-edited the two-volume treatise on *The Cereal Rusts* a comprehensive treatment of all aspects of host-parasite interactions and biology of cereal rust fungi. In recognition of his outstanding research contributions, Dr. Roelfs was named a Fellow of the American Phytopathological Society in 1986.

Dr. Roelfs is recognized as one of the world's major leaders in cereal rust research. His name has been ranked with such past and present leaders in rust research such as I.A. Watson and R.A. McIntosh of Australia, J.W. Martens and D.J. Samborski of Canada, R. Johnson of England, and J.C. Zadoks of the Netherlands. Dr. Roelfs was the foliar disease expert on

the National Academy of Science delegation to China for wheat studies in 1976. He was twice invited to serve as consultant for epidemiology of cereal rusts with the Intra-American Institute for Agricultural Research based in Brazil, and he was an FAO consultant on wheat diseases in Pakistan. He also served as an advisor for cereal disease research in India, Mexico, and Morocco. Dr. Roelfs' presence at the Cereal Rust Lab served as a magnet for visiting scientist from all over the world.

Dr. Roelfs' great vitality and vast store of knowledge on cereal diseases will not be lost to us on his retirement. He retains a part-time association with the Cereal Rust Laboratory and the Department of Plant Pathology, and he maintains several active research interests including studies of the biology and evolutionary relationships of rusts in the *Puccinia recondita* (leaf rust) species complex. From his home near Grantsburg, Wisconsin, Dr. Roelfs is also pursuing studies of the rusts of native North American prairie grasses and their aecial hosts. We expect that to keep him busy for many years to come.

- Kurt J. Leonard

SOCIAL AFFAIRS

The 1993 Plant Pathology Corn Roast

The 1993 Plant Pathology Corn Roast was held Saturday, September 11 at the Rosemount Plant Pathology farm. Activity for the corn roast started about 6:00 AM when Jim Rowe and Kimon Karelis started roasting the pig and turkeys. Later they arranged tables, tapped the keg of beer, and prepared the corn. Department members, family, and friends started arriving at 2:00 PM. Before dinner activities included: volleyball, sampling hors d'oeuvres, conversation, and the traditional hayride provided by Phil Larsen at the seat of the John Deere tractor. Approximately 150 people savored the roasted meat, delicious fresh corn-on-the-cob, salads, chips, drinks, and deserts. The children enjoyed the special treat of a candy-filled piñata. The event was planned and carried out by the Social Committee members: Debbie Drange (chair), Dariush Danesh, Odette Holter, Jim Karelis, Kimon Karelis, Tsitsi Ndowora, Jim Rowe, Deborah Samac, and Nevin Young.

- Deborah A. Samac

"Bowling for Turkeys" Produced Four Winners

The St. Paul Student Center invited the Department to bowl for turkeys on December 2—an invitation accepted by 30 people that included graduate students, staff, and faculty members. The winning team consisted of Sandee Gould, Bob Noyd, and Pat Martinez, with an average team score of 175. The fourth turkey went to Kimon Karelis who had a high score of 214.

Holiday Party of 1993 Promotes Festive Atmosphere

Under the masterful leadership of the Social Committee, another season of zestful festivities culminated in the Holiday Party held Friday, December 17, 1993, in P403 Stakman Hall. Old Timers who came to celebrate with the Department were: **Herb and Jean Johnson, Art and Luella Stark, Bob Kroll, and Pat Burnes**. Again, this year, we were honored by having our holiday music performed by Liz Ozmon on the harp. A Certification of Appreciation was given to Liz for her contribution of music to the ongoing festivities. Violinist Dann Adair accompanied Liz. New this year was the collection of food items for the Second Harvest, Merriam Park Community Center Food Shelf. More than 250 food items were donated by members of the Department. The Cereal Rust Lab collected the greatest number of items and was awarded First Prize. As Social Committee Chair, Debbie Baden Drange stated, "before we announce the winner of the food collection contest, the Social Committee would like you to know that you are all winners! Because of your caring efforts, someone in our community will truly have a Merry Christmas. Thank you for your generosity." *- Social Committee*

Merriam Park Center Thanks Department for Food Shelf

The Merriam Park Community Center thanks the Department for contributions to the food shelf during the Holiday Season. They served 400 households or more than 1,200 children and adults. One recipient commented, "There really is a Santa Claus in someone's heart."

- Roberta Reberts, Food Shelf Coordinator

Bowling—That's Right Down Your Alley!

The Midwinter Bowling Party was held Saturday, April 9, 1994, at Hafner's Restaurant and bowling alley. Two faculty members, five graduate students, and one staff member along with their respective friends engaged in a dazzling display of skillful bowling at Hafner's. The high game of 176 was rolled by Dick Woodward, but not far behind was Sara Lathen, a friend of Meg Clemens, with a 171. Our bowling guru, Phil Larsen, turned in a respectable 155. We initiated a first time bowler which means some of us don't have to worry about having the lowest score, at least for a while anyway. Overall, no one took the games or themselves too seriously and we all had a good time.

- J. Patrick Martinez

E. C. Stakman Softball Game

The annual Stakman softball game between students and faculty was held on May 27, 1994 at Falcon Heights Community Park. It was a fine, clear day for a game, in contrast to many in recent years. The contest stayed close through four innings, when the faculty moved ahead with seven runs in the top of the fifth. Despite a rally late in the game, including a home run by Eric Eckwall, the student team was never able to make up the difference. Final score: Faculty 10, Students 3.

- Nevin Young

Tuesday Marks Donut Day

At 10 AM on Tuesdays, donuts and bagels are available for purchase. Department members can come to coffee, buy a donut or bagel and have an intelligent conversation with colleagues and friends. The last Tuesday of the month is *Birthday Tuesday*. Birthday announcements go out to persons having a birthday in the month throughout the Department. A birthday cake is served each month on the last Tuesday at 10 AM in Room 403 Stakman Hall. All faculty, staff and students are welcome!

- Debra Baden Drange



NEW FACULTY

Cereal Pathologist Position

Dr. Ruth Dill-Macky was hired on July 1 to fill the cereal pathologist position that Roy Wilcoxson occupied for several years. Ruth is a native of Australia. She received her B.S. in Botany from the University of Queensland and her Ph.D. from the same University in 1992. Her thesis topic was "The Epidemiology and Management of Stem Rust of Barley in North-Eastern Australia". Since September of 1992 Ruth has been a Research Associate in the Cereal Rust Laboratory where she worked on an American Malting Barley Association funded project entitled "Resistance in barley to *Puccinia graminis* f. sp. *tritici* and factors that influence resistance expression". The purpose of this research program was to establish why barleys are inconsistent in their response to *P. graminis tritici* race QCC and to determine if incomplete resistance can effectively be utilized in the Minnesota breeding program for the control of stem rust. Additionally, Ruth cooperated with A. P. Roelfs on the

identification of isolates of stripe rust collected from wheat and barley throughout the United States over the 1993 cereal growing season.

In her new position, Ruth will be generally responsible for small grain diseases but will spend much of her time on wheat scab. Additionally she will be cooperating in the barley and oats breeding program.

Ruth grew up on the Gold Coast or the warm northern coast of Australia. At the present time her parents live in Brisbane. Ruth loves the outdoors. She is an excellent swimmer and has swum competitively. She also is an avid camper and biker, having camped and biked extensively both in Australia and the United States. Although Ruth comes from a country where snow is nonexistent, at least in northern Australia, she has become a very good cross country skier. In fact she has adapted very well to the cold weather of Minnesota. In a camping trip to the Boundary Waters Ruth was out snow shoeing at 40 below! Welcome to Minnesota Ruth.

- Robert F. Nyvall

NEW EMPLOYEES

James R. Horn, Senior Accountant, began work July 11, 1994. He transferred from the Army High Performance Computing Research Center (AHPCRC). Jim holds a B.A. in accounting from Michigan State University. He has worked for General Mills and serves as First Lieutenant in the Minnesota Army National Guard.

Mary Kay Kersting began working in our Department August 1, 1994 as an Account Specialist. She also serves as departmental computer resource person and network manager. Mary Kay transferred to our Department from Human Ecology and has worked in accounting jobs at the University since 1986. She holds a B.A. in Social/Recreational Education from St. Cloud State University and a Computer Science Certificate from the University of Minnesota.

Eugene Krueger, Junior Scientist, began working June 21, 1993 in Dr. Robert Blanchette's laboratory on ultrastructural aspects of wood colonization by fungi. He has a B.S. degree from the University of Minnesota in Genetics and Cell Biology.

Daryle A. LaFleur, Junior Laboratory Technician began working August 1, 1994 in Dr. Benham Lockhart's laboratory on a project to develop detection methods for DNA plant viruses in tropical crops. He received his B.S. in Biology from the University of Minnesota.

Amy Nelson, ARS National Research Associate, came to the Cereal Rust Laboratory in February 1993 for a 2-year term. She works in Dr. William Bushnell's laboratory on host response genes, developing a transient assay expression system in barley epidermal cells. She's using anthocyanin genes so that living transformed cells turned red.

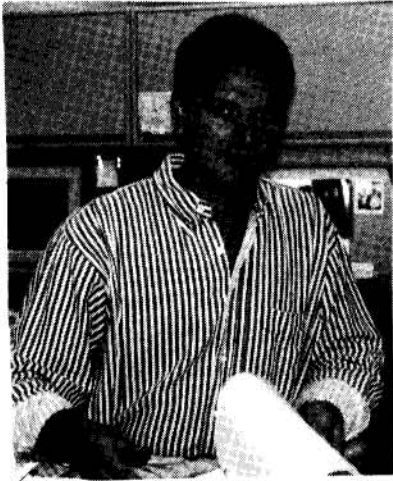
- Delores Huebner

RECENT PROMOTIONS

Dr. Nevin D. Young from Assistant Professor to Associate professor with tenure, July 1, 1994.

- Delores Huebner

NEW EMPLOYEES



James R. Horn



Mary Kay Kersting



Eugene Krueger



Daryle A. LaFleur



Amy Nelson

RECENT GRADUATE STUDENTS

**Name, Academic Background,
Starting Date,**

Advisor

Gust, Koren M. HS, Rhinelander, WI; B.S., University of Minnesota, St. Paul, MN
W 1994

Anderson

Kruger, Warren M. HS, Highlands North Boys High School, Johannesburg; B.Sc. and Honours First Class; M.Sc., University of the Witwatersrand, Johannesburg, South Africa.
F 1994

Zeyen

McBride, Matthew J. HS, Loyola Academy, Winette, IL; B.S., Purdue University, West Lafayette, IN
F 1994

Samac

McDougall, Dennis N. HS, Bruce, Bruce, WI; B.S., University of Minnesota
F 1993

Blanchette

Paulsrud, Bruce E. HS, Norman County West, Halstad, MN; B.S., University of Minnesota, Crookston; University of Minnesota, St. Paul
S 1994

Anderson

Penuela, Silvia. HS, Gimnasio Femenino, Bogota, Colombia; B.S., University of Los Andes, Bogota, Colombia.

SSI

Young/Koukkari

Salazar-Huerta, Francisco J. HS, Escuela Tecnica Forestal, Uruapan Mich., Mexico; B.S., Universidad Autonoma Agraria Antonio Narro, Mexico; M.S., Colegio de Postgraduados, Chapingo, Mexico.

F 1993

Roelfs

White, Wendy J. HS, Hopkins, Minnetonka, MN; B.S., University of Minnesota.

F 1993

Blanchette

Yang, Zhihong. HS Beijing 101, Beijing, China; B.S., Beijing Agricultural University, Beijing, China.

F 1993

Lockhart

Yu, Hui. HS, #1 Middle School, Hefei, China; B.S., AnHui University, Hefei, China; M.S., University of Science and Technology of China, Beijing, China.

F 1994

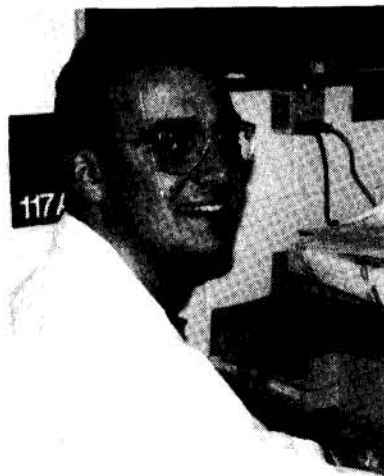
Mirocha

- Delores Huebner

RECENT GRADUATE STUDENTS



Koren M. Gust



Warren M. Kruger



Matthew J. McBride

RECENT GRADUATE STUDENTS (Continued)



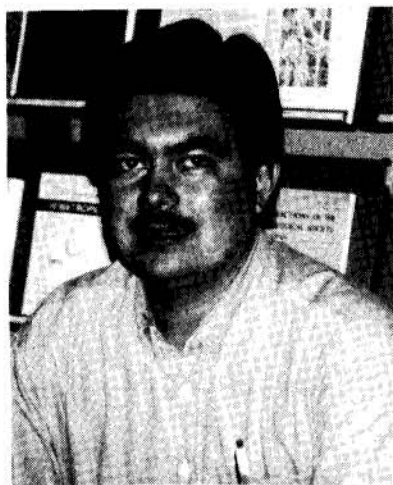
Dennis N. McDougall



Bruce E. Paulsrud



Silvia Penuela



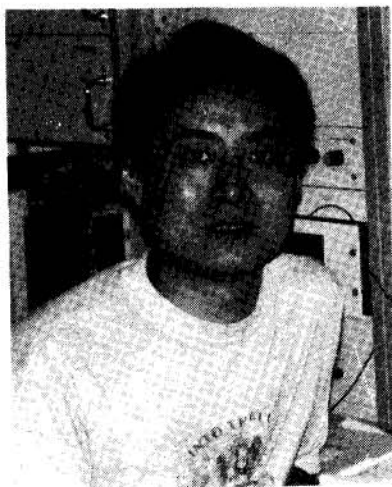
Francisco J. Salazar-Huerta



Wendy J. White



Zhihong Yang



Hui Yu

ORAL EXAMINATIONS PASSED**1993**

September 9	David Rizzo	PhD final
November 22	Timothy Clark	PhD final

1994

January 19	Javier Plasencia	PhD final
January 20	Kathy Kromroy	PhD prelim
January 28	Erik Eckwall	MS
March 14	Robert Noyd	PhD prelim
March 15	Brendt McCallum	PhD prelim
March 18	Tarkus Suganda	PhD prelim
March 18	Jean Williams	PhD prelim
March 25	James Kurle	PhD prelim
April 4	Nora Altier	PhD prelim
April 6	Dean Malvick	PhD prelim
April 25	Vergel Concibido	PhD prelim
May 6	Richard Woodward	PhD final
May 27	Dionicio Alvarado	PhD prelim
June 15	Tsitsi Ndowora	MS
June 20	Chad Behrendt	MS

SEMINARS**Plant Pathology Seminar, 8201, Monday, 3 PM, 365 Borlaug, Fall Quarter 1993**

- September 27. Brent McCallum. The Secret Sex Lives of Plant Pathogenic Fungi.
- October 4. Cecilia Jones. Viral Predisposition or Interference to Fungal Infections and Disease Development.
- October 11. Dean Malvick. Application of DNA Fingerprinting to Studies of Fungal Epidemiology and Diversity.
- October 18. Dionicio Alvarado. Is the Pitch Canker Fungus *Fusarium subglutinans* f. sp. *pini* an Introduced Pathogen to California?
- November 1. Jason Brantner. The Role of Phytotoxic Compounds in the Pathogenicity of *Bipolaris oryzae* on Rice.
- November 15. K. C. Lin. The *avr9* Gene of *Cladosporium fulvum* on Tomato.
- November 22. Jim Kurle. Plant Pathogens: Their Role in the Corn/Soybean Rotation Effect.
- November 23. Junping Chen. The Occurrence and Significance of the Fumonisin Mycotoxins Produced by *Fusarium moniliforme*.

November 29. Vergel Concibido. The Effects of Ozone on Fungal Pathogenicity and on the Severity of Plant Disease.

Plant Pathology Seminar, 8201, Monday, 3 PM, 365 Borlaug, Winter Quarter, 1994

- January 24. Tarkus Suganda. The Use of Tree Bark for Plant Disease Control.
- January 31. Laszlo Gyenis. Biological Control of *Streptomyces scabies* and Other Plant Pathogens.
- February 7. Chad Behrendt. The Role of Insects in Infection of Aspen by *Hypoxylon mammatum*.
- February 14. Robert Noyd. Acquired Chemical Defenses in Grasses: The Role of Fungal Endophytes.
- February 21. Pedro Figueroa. Pre-emptive Breeding for Disease Resistance.
- February 28. Dionicio Alvarado. Forest Pathology Research in Mexico.
- March 7. Akhilesh Mishra. Elucidation of Plant Pathogenesis Determinants: Perspective and Prospects.

Special Seminars

- February 11. Dr. Zahir Eyal, Head of Botany Department and Director of the Institute for Cereal Crops Improvement. Transgenic Wheat and It's Incorporation In Breeding Schemes.
- February 17. Dr. Jeremy J. Burdon, CSIRO, Canberra, Australia. Extinction and Migration, and the Genetics of Host-Pathogen Interactions.
- April 14. Ms. Nora Altier, INIA La Estanzuela, Uruguay, South America. Impact of Diseases on a Perennial Forage Legume: Birdsfoot Trefoil.
- April 15. Dr. Mike Miller, Soil Ecologist, Argonne National Laboratory, Argonne, Illinois. Mycorrhizal Hyphae and Soil Aggregation.
- May 19. Professor Michael J. Wingfield, Mondi Professor of Forest Pathology, University of the Orange Gree State, South Africa. Eucalyptus Diseases and their Management in South Africa: Including Comments on Science in a Changing South Africa.

Employment Seminar Series. Room 491, Borlaug Hall.

- April 27. Their Career Development and Job Responsibilities. Panel Presentation by Three Representatives of Major Agrichemical Companies: Walt Wilms, DuPont, Kip Sanders, CIBA, and Erik Flora, DowElanco.
- May 4. Session I. Preparing Professional Scientific Posters. An Introductory Lecture to Poster Presentation. Session II. Scientific Poster Assembly Techniques. Putting the Poster Together. Kristine Kirkeby, Graphics Consultant.
- May 11. Pros and Cons of Applications Received and Presentations Made Relative to Their Search Process. Panel Presentation: Small Grains Pathology Search Committee.
- May 18. Preparing for Your Job Interview and Seminar. Dr. Deborah A. Samac.
- May 25. Development of Her Business From Technical and Business Perspectives. Ms. Sandy Aarestadt, Owner and Operator of a potato tissue culture business for producing disease-free potato stocks.
- Marguerite M. Clemens

DIAL U CLINIC

The Dial U Clinic is an integrated clinic responsible for responding to inquiries from the general public about the plant materials in their home landscapes. Plant pathology, entomology and horticulture specialists work together to provide information over the phone directly or after examining samples. A part time wildlife specialist provides help with difficult questions such as how do I get the snakes out of my basement, the raccoon out of my chimney or the bats out of my attic. Julie Watson and Flora Mercil along with new technicians, Kathryn Bevequa, Chad Behrendt and Brian Jorgenson assisted as pathologists in the clinic during the past season. Grade Bucher helped fill in when supervisory pathologist, Cindy Ash, was away. The season started out slow but with the help of WCCO's Rebecca Kolls and her plugs for the clinic, business moved into full swing by the end of June.

Anthraxnose wasn't as common as spring of 1993 but leaf spots in general were very popular on all plant species. Weather conditions also favored powdery and downy mildew, and numerous blights including the infamous late blight devastated tomatoes in home gardens. With the increase use of organic mulches, birds nest fungi are more frequently seen—we usually receive

samples of the peridioles stuck to foliage or building materials with the question "What is this and how do I get rid of it?".

In an effort to expand our list of management recommendations for diseases, research plots were established on the St. Paul campus to compare the efficacy of non-traditional fungicides such as baking soda and vegetable oil, to traditional fungicides such as chlorothalonil and triforine. Roses, tomatoes and bee balm (*Monarda*) are included in the ongoing study. Plans are to expand to two additional sites in 1995.

Two sessions of a new extension class were offered by Cindy Ash at the Dial U Clinic titled "Dial U Summer Camp". Each hands-on diagnostic session consisted of 28 hours of instruction on the diagnosis of biotic and abiotic plant diseases. The last day of each session featured an open house displaying the disease collections and notebooks of each student and offered free diagnostic services.
- Cynthia L. Ash

PLANT DISEASE CLINIC — 1993

In 1993 the Plant Disease Clinic processed 3,500 samples and phone calls. Of these samples 62% were submitted by commercial growers, 28% by University staff, and the remaining were from county Agents, Minnesota Department of Agriculture or non-commercial growers (mainly tree samples for Oak wilt, Dutch Elm disease, or *Verticillium* wilt testing). The majority of samples tested were soils for Soybean Cyst Nematode, oak samples for Oak wilt and floriculture crops for virus and root rot diseases.

The clinic staff completed two projects associated with mycotoxin production in wheat and corn during the fall and winter season. Also, during the winter months, many grain storage samples were tested for storage molds due to the wet growing season and the poor condition of grain at harvest.

A new test was added in 1993 to identify the presence of *Aphanomyces* sp. in sugarbeet soils. The *Aphanomyces* sp. sugarbeet soil test was developed at Crookston by Dr. Carol Windels and samples were processed by clinic staff. The procedure allows growers to eliminate sites with high disease levels before planting sugarbeets. Disease avoidance is still a main stay of disease management.
- Sandra Gould

PESTICIDE APPLICATOR TRAINING PROGRAM AND RELATED ACTIVITIES

The Minnesota Extension Service's Pesticide Applicator Training Program (MES PAT) over the past year has continued to make changes. One of the more important changes has been the move to establish industry, grower and other associations as sponsors of commercial and non-commercial recertification workshops. Other efforts in MES PAT include: a new initiative to revise commercial and non-commercial PAT manuals; greater linkages to related areas in public health (occupational, environmental, and community health and safety); an initiative by MES PAT to develop a state, regional and national network on the Internet to support PAT and related pesticide education programs; national release of a new slide set on endangered species developed by the Minnesota Department of Agriculture with involvement from MES PAT; and major statewide leadership efforts on the newly revised Worker Protection Standard regulating pesticide exposure to agricultural employees.

A major activity in the private MES PAT program was an in-depth discussion by extension educators from throughout the state around proposed changes to the private PAT program. The extension educators reaffirmed the importance and value of PAT in their educational programs and are now initiating quality improvements to the program. Also recognized by the extension educators are the close links between PAT and educational efforts in environmental public issue education as well as agricultural, horticultural, urban, and other pest management production and environmental issues and programs.

- *Dean Herzfeld*

MEETINGS

American Phytopathological Society Annual Meeting August 6-10, Albuquerque, New Mexico

Approximately 1100 plant pathologists and spouses were pre-registered for the annual Phytopathological Society Meeting in Albuquerque. Although the temperature outside reached the 90s daily, it was cool and comfortable in the downtown Convention Center. A total of 32 pathologists, almost equally divided between faculty and graduate students, and several spouses were in attendance from the University of Minnesota. Seven papers and seventeen posters were presented by Minnesotans that ranged in subject matter from Biological control of antibiotic-resistant mutants of *Streptomyces scabies* to Fungal brown spot of cultivated wild rice.

The annual Minnesota social was held together with

the University of Wisconsin. Knowing that an M is an upside down W, Robert Nyvall corrected the alignment of the Minnesota banner that hotel workers had hung upside down to make a W. Subterfuge by Wisconsin alumni was suspected. Forty-six old timers, faculty, graduate students, guests and friends signed the Minnesota guest book.

Congratulations to Carol Windels who shared the North Central Division Distinguished Service Award with Abe Epstein of Iowa State University.

Guests who attended the Hospitality Party sponsored by the University of Minnesota and University of Wisconsin from Minnesota were: Neil & Barbara Anderson; Ernest & Marlene Banttari; Chad J. Behrendt; Ruth Dill-Macky; Eric Eckwall; James Groth; Roger Jones; Linda Kinkel; James Kurle; Philip O. Larsen; Dean Malvick; Brent McCallum; Mary Moberg & son Brandon; Robert Noyd; Francis L. Pflieger; Deborah A. Samac; Jean Williams; and Richard P. Woodward. Guest from the USDA-ARS Cereal Rust Laboratory, St. Paul, MN was: David Long. Guest from the Northwest Experiment Station, Crookston, MN was: Cheryl Engelkes. Guest from the North Central Experiment Station, Grand Rapids, MN was: Robert Nyvall. Old Timers from elsewhere were: Eldon & Mary Lou Brown, CREC, Lake Alfred, FL; Kira L. Bowen, Auburn University, Auburn, AL; Barbara Christ, Penn State University, College Station, PA; Robert L. Doudrick, USDA Forest Service, Gulfport, MS; Al & Ann Ellingboe, University of Wisconsin, Madison, WI; Gary Herchel, University of Illinois, Urbana, IL; John H. Hill, Iowa State University, Ames, IA; Barry Jacobsen, Montana State University, Bozeman, MT; Coy Jones, Rhone-Poulenc, RTP, NC; George & Ruth Lauz, VPI & SU, Blacksburg, VA; Rohland Line, Washington State University, Pullman, WA; Tom W. Mew, International Rice Research Institute, Manila, Philippines; Jeri J. Ooka, University of Hawaii, Kauai Branch Station, Kapaa, HI; Noemi P. Orolaza, University of Manitoba, Winnipeg, Manitoba, Canada; Susan Penix, University of Missouri, Columbia, MO; David Rizzo, USDA Forest Products Laboratory, Madison, WI; Larry Singleton, Oklahoma State University, Stillwater, OK; Tad Smith, Rohm and Haas Co., Spring House, PA; Jo-Ann Stebbing, Agriculture Canada, Winnipeg, Manitoba, Canada; Janell Stevens-Johnk, Texas A&M University, Dallas, TX; Elwin L. Stewart, Penn State University, College Station, PA; Paul S. Teng, International Rice Research Institute, Manila, Philippines; Laura Todd, Purdue University, West Lafayette, IN; Herman Warren, VPI & SU, Blacksburg, VA.

- *Robert F. Nyvall + Marguerite M. Clemens*

PLANT PATHOLOGY PARTICIPATES IN MENTORING WORKSHOPS

Members of the Department of Plant Pathology participated in two workshops relating to mentoring during 1994. The first workshop was tailored specifically to Plant Pathology by the Coalition of Women Graduate Students. This group has initiated an ambitious plan to increase and improve the mentoring of students, particularly women graduate students, at the University of Minnesota. The Department of Plant Pathology was chosen as one of several departments to test a pilot workshop on mentoring.

The initial phase of the workshop was a questionnaire distributed to all students, faculty, and staff several weeks in advance of the actual program. The survey was designed to assess perceptions about mentoring and determine the degree of current mentoring in the test departments. Members of the Coalition of Women Graduate Students followed up the questionnaire by calling department members to encourage their participation and as well, met with the graduate students concerning the mentoring already going on in the department. The workshop was held during the morning of April 20 and 25 department members participating. During the first part of the workshop the Coalition members presented a summary of the survey results. Response to the surveys was high with 58% of graduate students, 49% of faculty and 34% of staff returning surveys. The survey showed that although the department has many good mentoring activities going on, there are areas in which we can increase our efforts. 60% of the graduate students responding indicated that they have at least one faculty mentor and 13% have a peer mentor in the department. Of the 40% without mentors, 83% feel that this is something missing from their graduate experience. All groups felt that the department was accommodating, cooperative, friendly, and welcoming. Some groups felt that the department is bureaucratic, conservative, democratic and ambitious. Other parts of the survey requested information on major problems facing graduate students, activities and ideas concerning mentoring, and advice to graduate students from faculty and staff. It also summarized definitions of quality mentoring relationships, examples of good and poor mentoring in Plant Pathology, issues graduate students would like to discuss with faculty and ideas for improving the quality of mentoring. In the second part of the workshop, participants met in small groups to discuss specific issues and needs including: improving faculty participation in department activities, identifying the flow

of mentoring relationships, developing better mentoring activities especially for non-traditional students, professional development, and problems/prospects in mentoring relationships. Each group discussed the specific issue and then proposed several ideas for activities to address the concerns. The last part of the workshop was devoted to discussing these ideas as a large group and then voting for the top priorities. For each group, one activity was chosen for action and the members of the group committed to work on the chosen activity during the next 6 months. The Coalition summarized the entire workshop, from the surveys to the action plans, and distributed the summary to the department. They will be meeting with us again after 6 months and one year to assess the success of the workshop.

The second mentoring activity was the participation of a team from Plant Pathology in a St. Paul campus-wide mentoring workshop entitled "Mentoring for the 1990s and Beyond. . .New Perspective on an Old Way to Move Ahead. This workshop was sponsored by the commission on Women and the St. Paul Campus Initiative in order to assist units in creating, strengthening, and diversifying mentoring practices and activities for graduate students, faculty, and staff. Approximately 50 teams of 5-8 people from different campus units participated in the workshop. The workshop was divided into several exercises that were conducted in either peer groups (student, faculty, staff) or with the team. Exercises focused on different mentoring relationships and experiences, premising of good mentoring and ideas on fostering more effective mentoring and finally, developing action plans to expand or revise mentoring practices. Many of the ideas for action from Plant Pathology were similar to the plans made in the departmental workshop.

From the two initiatives, in the next year the department will be working on increasing publicity for events to increase participation, inviting outside speakers to the department, continuing activities and developing new ones to foster stronger relationships and personal interactions in the department, encouraging students in grant writing and reviewing of manuscripts, and organizing informal discussion groups to discuss research, job opportunities, and other topics of interest. The rewards of such activities, academic success, professional success, and advancement of the science of plant pathology, is expected to benefit both the mentor and mentee.

- *Deborah A. Samac*

FACULTY ACTIVITIES

Clipper Ship Mycology Studied by Bob Blanchette

Bob Blanchette traveled to the Spring Point Museum at Portland, Maine, in August 1993, to examine the "Snow Squall," the only clipper ship left from the mid-1800s, sunk off Franklin Island in the Atlantic Ocean. The ship is being restored; however, fruiting bodies of fungi are growing from the timbers and Bob's job was to identify the fungi and to suggest ways of getting rid of the fungal growth and prevent further deterioration. Bob is a fun-guy!

Krupa, Adair, and Reece Set Up Field Test in Germany

From September 2 to 13, 1993, Sagar Krupa was at the Institute for Plant Ecology, in Giessen, Germany, to build the first system in the world for open-field exposure of a natural ecosystem to the past (1900) chemical climate. Dann Adair and Clive Reece (Soil Science) accompanied Sagar in setting up the equipment. Krupa then flew to Ottawa, Canada, to meet on September 19-23, with the review board of the Natural Science and Engineering Research Council (of Canada) for Environmental Quality. This board reviews research grants (\$1.7 million for 1993-94).

Four Chinese Scientists Visit Department September 23-24

Three agronomists (Li Bao-Jin, Fei Dao, and He De-Tian) and one plant pathologist (Liu Xin Yi), all from the Hebei Province in China, came to visit with Phil Larsen on departmental programs, T. Kommedahl on flax diseases, N. Anderson on potato disease control, C. Mirocha on mycotoxins, S. Gould on the disease clinic, C. Ash on diagnosis, K. Leonard on cereal rust, and R. Busch on wheat breeding. Junping Chen and Daqun Liu served as interpreters.

Mirocha Presented Lockwood Lecture in Connecticut

Chet Mirocha was invited to present the Lockwood Lecture at the Connecticut Agricultural Experiment Station, in New Haven, on October 28, 1993, on the topic "Biology Through Mass Spectrometry." He was also the featured speaker for the Connecticut Mass Spec Discussion Group later in the day.

Krupa Goes to FAO-Rome for Global Climate Change Workshop

Sagar Krupa was one of 15 scientists invited to participate in a workshop on "Global Climate Change and Agricultural Production," December 7-11, 1993, at FAO Headquarters, Rome, Italy. A policy statement was adopted for "FAO-Global Agricultural Strategies for the 2000s". Sagar Krupa and J.J. Jäger (Germany) have co-authored a position paper, "The Adverse Effects of Elevated Ozone and Ultraviolet-B Radiation on Agricultural Production".

Lockhart Seeks Viruses on Sugarcane in Florida

Virologist Ben Lockhart traveled to Florida, December 16-19, 1993, to the USDA Sugarcane Field Station, at Canal Point, Florida, in collaborative research on detection of sugarcane viruses. He worked with Dr. Jack Comstock, pathologist at the station.

Cronjé From South Africa to see Lockhart about Sugarcane Viruses

Pieter Cronjé from the Sugarcane Research Station at Mount Edgumbe, South Africa, came to discuss sugarcane virus detection with Ben Lockhart, January 10-15, 1994, in Lockhart's lab.

Groth Attended Regional Corn Breeders Meeting in California

Jim Groth participated in the Regional Meeting of NE-24, at the Asilomar Conference Center, near Monterrey, California, January 11-13, 1994. This was the annual meeting of the sweet corn breeders.

Ash's Course on Tree and Turf Diseases Attracts Record Numbers of Students

Nearly 50 day and CEE students were registered in this 2-credit course, taught by Cindy Ash, with assistance from Dave McDonald; it met each Monday from 6:20 to 9:20 PM—one hour of lecture and 2 hours' lab. Chad Behrendt and Flora Mercil were teaching assistants in the lab and Grace Bucher helped in preparation of materials for the course.

Young Showed a Poster at California Meeting

Nevin Young went to a meeting of *Plant Genome II*, on January 24-27, 1994, in San Diego, California. He presented a poster.

Blanchette Spoke at Raiders of the Canadian Forests Symposium

Bob Blanchette presented a paper on *New Uses for Forest Fungi* in a symposium on *Raiders of the Canadian Forests*, at Lakehead University, College of Forestry, Thunder Bay, Ontario, Canada, January 28-30, 1994. Discussion centered on pathogens and insects of forest trees.

Lockhart Addressed American Hosta Society in Chicago

Ben Lockhart spoke on *Viruses on Hosta*, on January 29, 1994, in Chicago, to the members of the American Hosta Society (the Society, not *Hosta*, is American—*Hosta* was introduced from China, Korea or Japan).

Samac Active in the Science and Seminar Circuit

On March 11, Debby Samac served as a judge representing the USDA at a Twin City Regional Science Fair, held at Augsburg College. Then, on March 25, she held fourth in a seminar at Hamline University on the role of biotechnology in improving plant disease resistance, as well as meet for lunch at Hamline with the Women in Natural and Social Sciences.

Lockhart Goes "Down Under" to Address Sugar-cane Virologists

From March 20 to April 13, 1994, Ben Lockhart was on his way to or in Brisbane and Cairns, Queensland, Australia, to present a keynote address on Current Research on Sugarcane Bacilliform Viruses, to the meeting of the International Society of Sugarcane Technologists. Ben also spoke on badnaviruses at a seminar in the University of Queensland. Brisbane has more than a million inhabitants.

Krupa in Canada to Start Field Project in Alberta

Sagar Krupa spent March 27 to April 1 in Edmonton, Alberta, Canada, to set up a field project for the next 5 years in the West Central Region of Alberta. Sagar chairs the Science Advisory Committee of the Alberta Government-Industry Airshed Management Program.

Nyvall Participates in Regional Project S-234 Meeting

Robert Nyvall participated in the Regional Project S-234 meeting on Discovery and Development of Plant Pathogens for Biological Control of Weeds that was held in Peoria, IL April 5-7, 1994.

Groth Goes to Israel to Look for Cereal Rusts

From April 4-16, 1994, Jim Groth visited Israel to interact with scientists at the Lieberman Germplasm Institute to search for rusts on wild relatives of cereal crops. This involved field trips to natural areas in the Galilee area of northern Israel. Drs. Jacob Manisterski and Zahir Eyal were hosts. The Lieberman-Okinow Endowed Chair provided funds for the trip.

Mirocha Visited Penn State and Old Timers Stewart and Tammen

Chet Mirocha was at Pennsylvania State University April 12, 1994, and learned that Minnesota Old Timer and Head Elwin Stewart will marry Old Timer Barbara Christ, MS 1980, both on the faculty in the Department of Plant Pathology. They bought a 100-year-old farm house and 40 acres located 5 miles from campus. They park their cars in the corn crib. Chet reports that staff are pleased with Elwin's "headship". Former Minnesota Ag Dean Jim Tammen has retired and has an office in the Fusarium Research Center run by Paul Nelson. Jim has fond memories of Minnesota and he and Marilyn send greetings to friends in Minnesota.

Wilcoxson Worked on Wheat Publications at CIMMYT in Mexico

Roy Wilcoxson went to CIMMYT headquarters in Mexico City, May 7 to June 11, 1994, at the invitation of Gene Saari, MS 1962; PhD 1966, to work with him in preparing and writing publications on wheat diseases. His wife Iva accompanied him.

Krupa Participated in Tropospheric Ozone Conference May 11-13

At an international tropospheric ozone conference in Orlando, Florida, sponsored by the Air & Waste Management Association, Sagar delivered one lecture on *Ambient Ozone and Crop Response: A Unified View of Cause and Effect*, and participated in a panel of seven on the ecological effects of ozone, as related to ecological risk assessment analyses.

Krupa Served on Canadian Grant Review Board

Sagar Krupa attended the Environmental Quality Grants Review Board meeting of the Natural Sciences and Engineering Research Council of Canada, on May 23-26, 1994, in Ottawa. This Board is responsible for more than \$10 million of research support for 1994-95, in Canada.

Lockhart Traveled to Ghana May 29

Ben Lockhart and Kent Crookston (Department of Agronomy and Plant Genetics) visited Ghana May 29 to June 10, 1994, to help prepare a grant proposal. The University of Minnesota and the Crops Research Institute of Ghana were awarded a McKnight Foundation grant to prepare a proposal on improvement of root and tuber production in Ghana.

Nosal from Canada Consulted with Krupa on Ozone

Dr. M. Nosal of the University of Calgary, Canada, visited Sagar Krupa on June 6-8, 1994. Nosal and Krupa are two of three coinvestigators on the project *Ambient Ozone and Plant (Crops and Trees) Response/Numerical Modeling* that is funded by the Canadian Government. This project started in 1984, and Sagar is the project leader.

- Thor Kommedahl

DEPARTMENT ACTIVITIES

Department Tour of APS Headquarters was Informative

On Wednesday, April 13, 1994, APS rolled out the red carpet for more than 30 members of the Department visiting APS headquarters in Eagan. After a lunch provided by APS the tour group had a chance to visit and ask questions of APS staff involved in all aspects of APS operations. This 'behind-the-scenes' look included finding out what happens when you buy a book from APS Press, how APS keeps track of the 7,000 abstracts submitted for the annual meeting, what APS Member Services does, what an internet coupling box looks like, how colored photos get onto the pages of Plant Disease, and much, much more. Afterwards APS staff demonstrated and led a discussion of new and potential APS electronic services. Many thanks to Steve Nelson and all the APS staff for a very informative and enjoyable afternoon. The tour was sponsored by the Professional Equality in Plant Pathology (PEPP) Committee and APS.

- Dean Herzfeld

The Spring General Assembly was held on Tuesday, April 26, 1994 in Room 408, Agronomy Building from 10:00-12:00 noon. David Swanson from Employee Benefits gave a seminar on investing. His seminar was for the novice investor discussing stocks, bonds, mutual funds and the process of investing. A pizza lunch was served after the assembly.

PLANT PATHOLOGY AT THE NORTH CENTRAL EXPERIMENT STATION

The plant pathologist located at the University of Minnesota North Central Experiment Station is Robert Nyvall. He is ably assisted by An Hu who received her Masters in Plant Pathology from North Carolina State University. Summer help is provided by Christine Neary, a sophomore at the University of St. Thomas. The laboratory and office is located at the Experiment Station Administration Building. Cooperative work is also conducted with wild rice breeder Raymond Porter.

The two major areas of research are etiology and control of diseases of cultivated wild rice and development of a mycoherbicide to control purple loosestrife, an exotic weed that is invading lakes and wet lands. Research on fungal brown spot of cultivated wild rice has led to the conclusion that it should be treated as two separate diseases. Efforts to control brown spot with applications of propiconazole had proved to be erratic. Subsequent work demonstrated that brown spot is caused by two different pathogens, with two different etiologies and two means of control. Fungal brown spot is caused by *Bipolaris oryzae* and spot blotch is caused by *B. sorokiniana*. Present and future work will involve research on the etiology of the two diseases and control measures that incorporate agronomic practices without the use of fungicides. This research has been funded by the Minnesota Cultivated Wild Rice Growers.

Work on mycoherbicides has involved isolation, identification and testing of fungi for pathogenicity to purple loosestrife. Several fungi have been identified as potential mycoherbicides. Present and future work will involve testing of processes and methods of applying the fungi to loosestrife plants in the field. Additional research will also include combining fungi with insects to either kill or reduce populations of loosestrife in wetland areas. This research has been funded by the Legislative Committee for Minnesota Resources in cooperation with the Minnesota Department of Natural Resources and the Department of Agriculture.

- Robert F. Nyvall

USDA/ARS CEREAL RUST LABORATORY

The Cereal Rust Lab faced the end of an era with the retirement of Dr. Alan Roelfs in January, 1994, after 32 years of Federal service, 28 of which were at the Rust Lab. Due to many years of static funding and increasing research costs, we were unable to refill Alan's position. Instead, funding from Alan's cereal rust epidemiology project had to be redistributed to shore up the four remaining projects at the Rust Lab. The annual stem rust and leaf rust surveys that Alan supervised for so many years will be carried out under the nominal supervision of Don McVey and Kurt Leonard. Dave Casper and Dave Long will handle survey trips throughout the Great Plains, with Jerry Ochocki serving as an alternate when needed. Dave Casper will do stem rust race identifications, and Dave Long will be responsible for identifying wheat leaf rust races. In the past few years Alan Roelfs and Ruth Dill-Macky invested a great deal of effort in research on resistance in barley to the new race QCC of wheat stem rust. Their success in developing effective screening methods led to their identification of several good sources of resistance before Alan's retirement.

We have been fortunate to have several excellent postdoctoral research associates working in the Cereal Rust Lab in 1994. Paul Zambino and Anne Kubelik completed postdoctoral research assignments with Les Szabo. Paul is currently working for the U.S. Forest Service in Rhinelander, Wisconsin. Anne will be teaching at College of St. Catherine this fall. Ruth Dill-Macky moved from the Rust Lab, where she spent two years as a postdoc with Alan Roelfs, to her new position as Assistant Professor in the Plant Pathology Department with responsibility for small grain diseases. Amy Nelson and Wenlian Deng will complete their postdoctoral assignments with Bill Bushnell in late 1994 or early 1995. Amy has accepted a USDA-ARS position in Beltsville. Eric Swann, who received a postdoctoral research fellowship, arrived from Berkeley to begin research with David McLaughlin in the Plant Biology Department and Les Szabo at the Rust Lab. Eric is studying basidiomycete phylogeny through comparisons of ribosomal DNA sequences.

Several visiting scientists participated in research projects at the Cereal Rust Laboratory in 1994. Dr. Charles Hu from the Chinese Academy of Agricultural Sciences continued his collaboration with Alan Roelfs on wheat stem and leaf rusts. Later he moved to research on wheat scab resistance with Ruth Dill-Macky and Bob

Busch (USDA-ARS, Agronomy and Plant Genetics Department). Dr. Yehoshua Anikster from the Institute of Cereal Crops Improvement at Tel Aviv University spent nine months working with Bill Bushnell on chromosome numbers and behavior of chromosomes during teliospore development in rust fungi (mainly oat crown rust). Dr. Tamar Eilam, also of the Institute of Cereal Crops Improvement in Tel Aviv, spent one month working with Bill Bushnell developing video imaging procedures to measure relative nuclear DNA contents of various rust fungi. As time and teaching schedules permitted, Dr. Clarke Garry from the University of Wisconsin at River Falls continued working with Les Szabo on ribosomal DNA sequences of barley rusts and related species.

Other notable visitors at the Cereal Rust Laboratory in 1994 included John Martens, Don Harder, and Jim Kolmer, Agriculture Canada; Eugene Saari and Julio Huerta-Espino, CIMMYT, Ursula and Hartmut Walther, from the former East Germany; Jeremy Burdon, CSIRO Australia; John Taylor, UC Berkeley; Bob McIntosh, University of Sydney Wheat Breeding Institute, Australia; Janis Antonivics, Duke University; Tom Chase, South Dakota State University; Brian Steffenson and Yue Jin, North Dakota State University; J. Artie Browning, Olympia, Washington; Steve Leath, North Carolina State University; and Markus Andres, Switzerland. - Kurt J. Leonard

NEWS FROM CROOKSTON, MINNESOTA

Rita Kuznia, Research Fellow on the plant pathology project at the Northwest Experiment Station (NWES), accepted a position as Assistant Scientist at Northrup King Co. in August, 1994. She will be working on diseases of corn with plant pathologist Dr. David Kendra. Rita graduated with an MS in plant pathology from the University of Minnesota in 1991. She currently resides in Janesville, MN with husband Joe, 7 cats, 4 dogs, and several chickens.

Dr. Barry J. Jacobsen, PhD 1973, plant pathologist at Montana State University, visited the NWES on July 18 to discuss research on diseases of sugar beet. Dr. Jacobsen is developing a research program on this crop, which is grown in eastern Montana. - Carol E. Windels

SUMMER FIELD PLANT PATHOLOGY — 5204

The seven graduate students who completed the 1994 edition of Field Plant Pathology (PIPa 5204) course benefitted from the participation of at least 25 different growers, agri-business employees, self-employed plant pathologists, university and USDA employees who shared their knowledge and experience with us. We had eleven field trips to locations as close as the St. Paul field plots and the University golf course and as distant as the University of Wisconsin's ginseng gardens and the Lelah Starks elite seed potato farm. We were chased out of the field and into the van only once by the onset of inclement weather and the chief driver for the tours managed to get the rental van stuck only once (in the sands of Isanti County). We were joined by Al Ellingboe, MS 1955; PhD 1957, and his U of W summer class of 9 students on Friday, July 1, for sessions at St. Paul and Rosemount, a pizza lunch in Borlaug Hall, and a picnic supper at Crystal Lake Park where the wind chill became unusually and unpleasantly low. The U of W class had a session on corn nematodes in a field near Red Wing in route home to Madison on Saturday morning after spending a "buggy" night at the Department's Rosemount farm. The U of M students, fortunately or unfortunately, did not get to experience either the buggy night or the session on nematodes.

- David H. MacDonald

PUBLISHING AVERTED PERISHING BY STAFF IN 1993-1994

In the year 1993-1994, the period covered by this issue of *Aurora Sporealis*, members of the Department kept the proverbial [perish] wolf from the door by a record of gainful publication. In this period, 38 papers were submitted for publication by 50 faculty, graduate students, and technicians as coauthors. Papers were submitted to 15 journals; in addition, there were six book chapters, four extension publications, one government report, and one book co-editor. Thirty abstracts were submitted, mostly to *Phytopathology*.

What journals were selected? *American Potato Journal*, *American Society of Agricultural Engineers*, *Canadian Journal of Botany*, *Crop Science*, *Current Genetics*, *Environmental Pollution*, *European Journal of Plant Pathology*, *Heredity*, *Holzforschung*, *Journal of Natural Products*, *New Phytologist*, *Physiological and Molecular Plant Pathology*, *Phytopathology*, *Plant Disease*, and *Theoretical and Applied Genetics*.

Pathogenesis or parasitism of at least 16 crops or plants were reported attributable to 14 fungus pathogens, three viruses, a bacterium, and some mycorrhizae. This information was compiled from reports where experiment station numbers were obtained for the papers, exclusive of abstracts, and may not be a complete record of all submissions by department members. It is not a record of papers accepted for publication, but it is a record of productive efforts to publish.

- Thor Kommedahl

MYCOLOGY CAN BE SO COMPLEX AND FRUSTRATING!

A student often asks:

How many *Fusarium* spores can be placed on the end of an inoculation needle during transfer?

The wise, old professor often replies:

Of course, that depends on whether the spores are macroconidia or microconidia, and whether there are hyphae or media attached. This varies also with the size of the needle, whether it is a flattened tip of Nichrome wire, or whether a dissecting needle is used to transfer spores. Nichrome, by-the-way, is an alloy of nickel, chromium and iron used in heating elements of electrical appliances. In this case, electrical appliances are superfluous in culture transfer, but the culture medium might be relevant. Potato-dextrose and water agar media probably behave differently, understandably so because the ingredients are different just as different species of *Fusarium* have spores that are different from each other. There may even be chlamydospores. One has to consider, too, the temperature of the needle. Is it flaming hot or just searing to the touch? Spores have been known to shrivel and lose mass during dehydration, especially that encountered in culture transfer. One has to ask whether the transfer is done in a laminar flow safety cabinet or not. Every lab should have such a hood for transfer, for many reasons. But not everyone can afford such a transfer chamber so the answer really depends upon the budget on your project, and when you ascertain that you will then be able to solve this problem.

- Thor Kommedahl