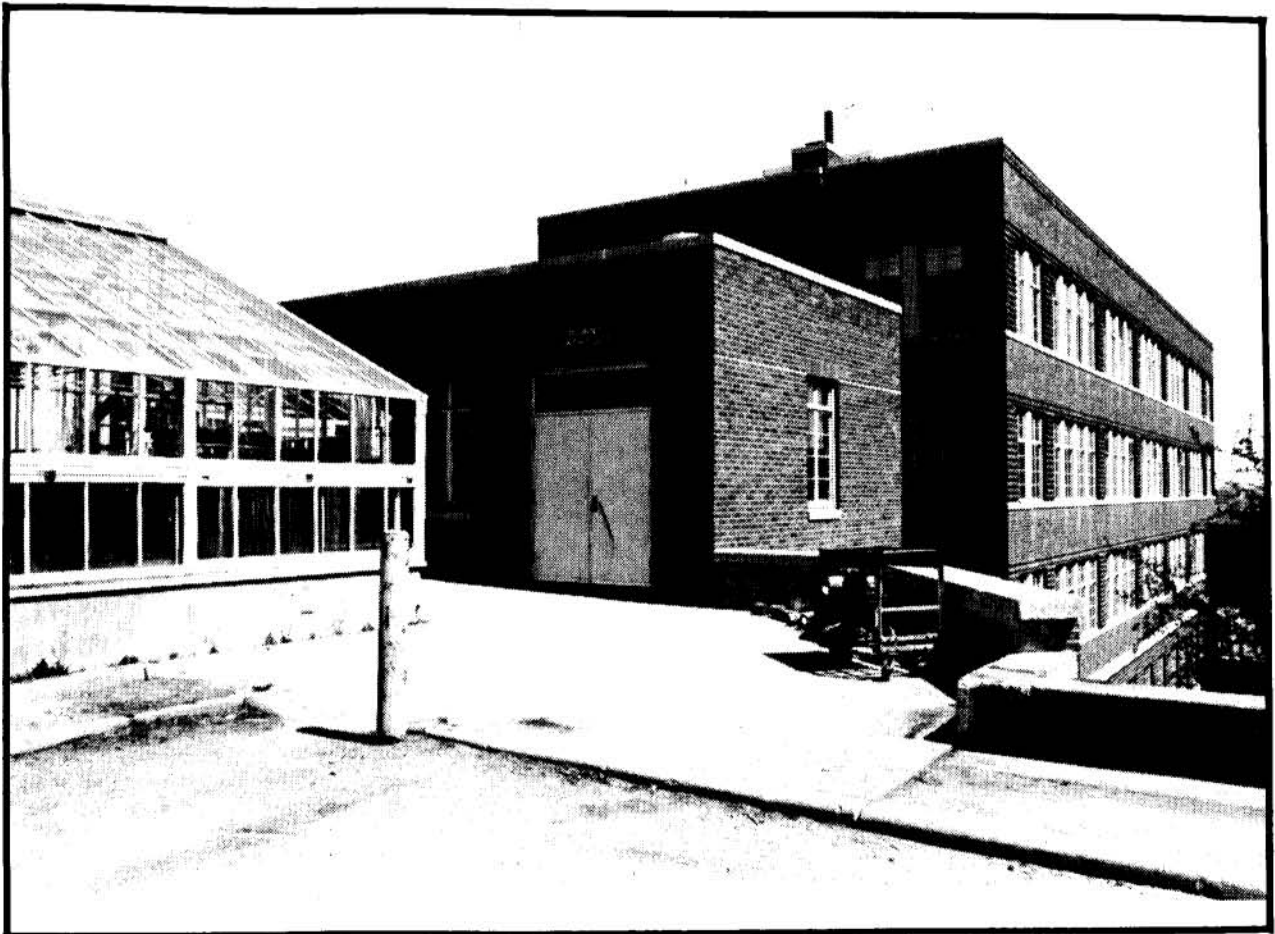


# AURORA SPOREALIS

November 1991



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

## MESSAGE FROM THE HEAD

Dear Friends:

It is a pleasure to bring you greetings from the Department of Plant Pathology. It has been an eventful year filled with challenges but also accomplishments. It seems that the terms reallocation and retrenchment are becoming a regular part of our vocabulary in land grant universities across the country. All the departments at the University of Minnesota have been asked to go through a process whereby we decide how we would give up 10% of our resources over a 5-year period and then justify the return of 20%. While this process has been frustrating, it has also been an opportunity for us to reassess our direction and priorities as a department. Of immediate concern are the approaching retirements of Dr. Roy Wilcoxson in December of this year and Dr. David French in June of 1992. Both of these individuals have made tremendous contributions to the State through their research and teaching programs. At this point, we have no assurance that we will be able to refill their positions as all positions are currently frozen.

On a brighter note, as a result of completing the fundraising for the Lieberman/Okinow Chair in Disease Resistance Breeding in Cereal Crops, we have awarded the first round of research grants to faculty in the department and at Tel-Aviv University to do research on small grains pathology. It is a pleasure to see the income from this Endowment be used after a long fundraising campaign.

The Department received another pleasant surprise in that it was given a significant gift of money from Dr. Harold Flor and his wife, Iva, to establish an Endowment to support graduate research assistantships in the department. Unfortunately, both Dr. and Mrs. Flor passed away in the past year. Their generous gift will serve as a continuing reminder of their friendship and support of the department.

Last year, we announced the arrival of Dr. Linda Kinkel as our newest faculty member working in the area of epidemiology and biological control. We are extremely pleased with the contributions of Dr. Kinkel and other new faculty that have come to the department in the past few years. As of this writing, we are in the final stages of a search for a new USDA-ARS faculty member working in the area of disease resistance in alfalfa. This position will be focused on identification of disease resistance genes at the molecular level and will add significantly to our emphasis in disease resistance within the department.

The number of graduate students in the department has remained stable for the past several years in the range of 30-35. We believe the quality of this group of students is very high and we are very proud of them. There is some question, however, about their athletic ability in that the faculty defeated the students in this year's Annual Stakman Softball Game. I suspect that this will not be a long term trend, however. This event continues to be a fun event for all of us each spring.

We have had a change in editorial staff for the *Aurora Sporealis* this year. Our Public, Alumni, and Institutional Relations Committee has taken on the task of gathering articles for and assembling the *Aurora* this year. Dr. Neil Anderson has provided leadership as Editor. We believe that this approach will ensure long-term stability and quality of the *Aurora*. As always, we hope you enjoy this issue and urge you to come and visit us or drop us a note as to your current status.

Best wishes to each of you for the coming year.

Sincerely,



Philip O. Larsen  
Professor and Head

## AURORA SPOREALIS

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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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## STAKMAN HALL IS 50

On October 15, 1941 the Department of Plant Pathology completed its move into a new building, now known as the Stakman Hall of Plant Pathology. The new building, under construction since early 1940, was financed by a legislative appropriation for a "Field Crops Building" to house the Divisions of Plant Pathology and Agronomy.

There was a fairly widespread feeling among the personnel of the two Divisions (as they were called then), headed by E. C. Stakman (Plant Pathology) and H. K. Hayes (Agronomy) that they might be uncomfortable sharing the same building. Accordingly it was planned to make a building of two wings, one for each Division.

The political maneuvering that made this plan acceptable to university authorities and legislators is unknown to the present generation, but it did result in a building of two wings, separated by enough space to accommodate Christensen Laboratory, built some years later and connected by a brick wall. By the wall the two were made "one flesh", satisfying the moral and legal principles of the legislature and university administration. But, to the casual observer, it looked like two buildings. In them Hayes and Stakman were absolute rulers in their own domains and continued their amiable cooperation in the production of disease-resistant cereals.

The new building(s) were made to provide as much space as possible at the expense of luxuries and frills. Consequently the walls were not plastered, except those in the halls, rest rooms and janitors' closets, which were required by law to be plastered. Moreover there were practically no funds for built-in furniture or new furniture or equipment. So, from the old Tottering Tower came the book shelves for the library, office desks, laboratory tables and counters as well as autoclaves, etc. Some of the old laboratory desks were still in use in the lab shared by C. M. Christensen and Carl J. Eide in the late 1980s.

There was a head house behind each "wing" and a subsequent appropriation by the legislature provided for greenhouses, 25 x 75 feet, for each Division. There were no passenger elevators in either building, but there were small dumb waiters which in later years were replaced by small passenger elevators.

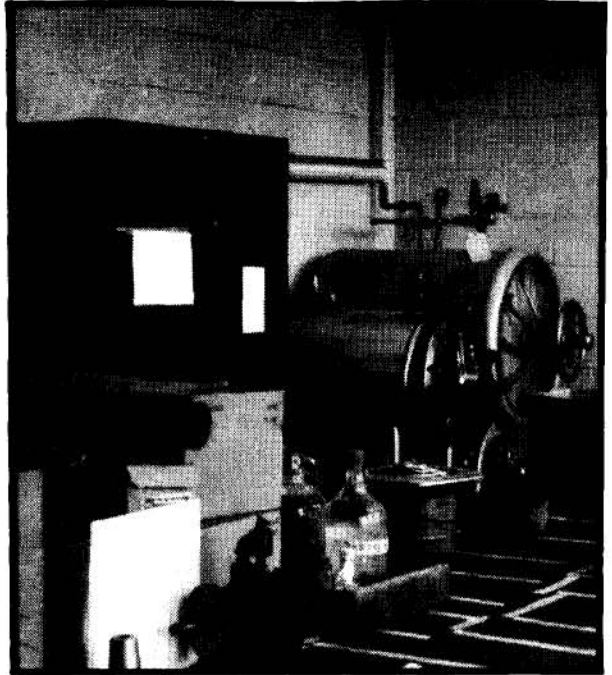
The new seminar room was large, with a "preparation room" next door that soon became a coffee room. Furniture in the seminar room consisted of the rickety old chairs and tables from the Tottering Tower. Later these were replaced in part with two solid walnut directors' tables, a walnut speakers table and a couple of dozen walnut arm chairs, all provided by a group of Old Timers in 1941.

During the 60s and 70s, a period of relative affluence, much of the old equipment was replaced, there was remodeling and modernizing of both teaching and research facilities. Space in the newly constructed Crops Research (Plant Science, Phase I) building relieved some of the pressure of a growing department. There were more faculty, more students, more hired help, but also research required more sophisticated machinery that took up a lot of space. In 1969, an entire floor of Plant Science II (Christensen Laboratories) helped relieve the space shortage even more.

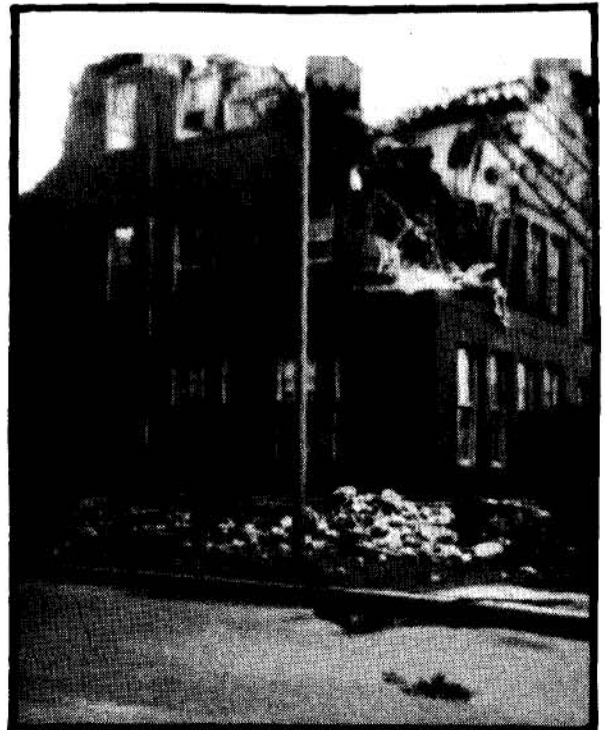
When Borlaug Hall, with new teaching facilities, was occupied in 1985 the first floor of Stakman, which had been devoted to class labs and lecture rooms, became available. Mirocha's mass spectrometer, etc. occupied the large lecture room. The large class lab is now used by the Plant Disease Clinic, while the advanced labs and lecture rooms, after some remodeling, are now occupied by MacDonald's nematode research project and Clinic offices.

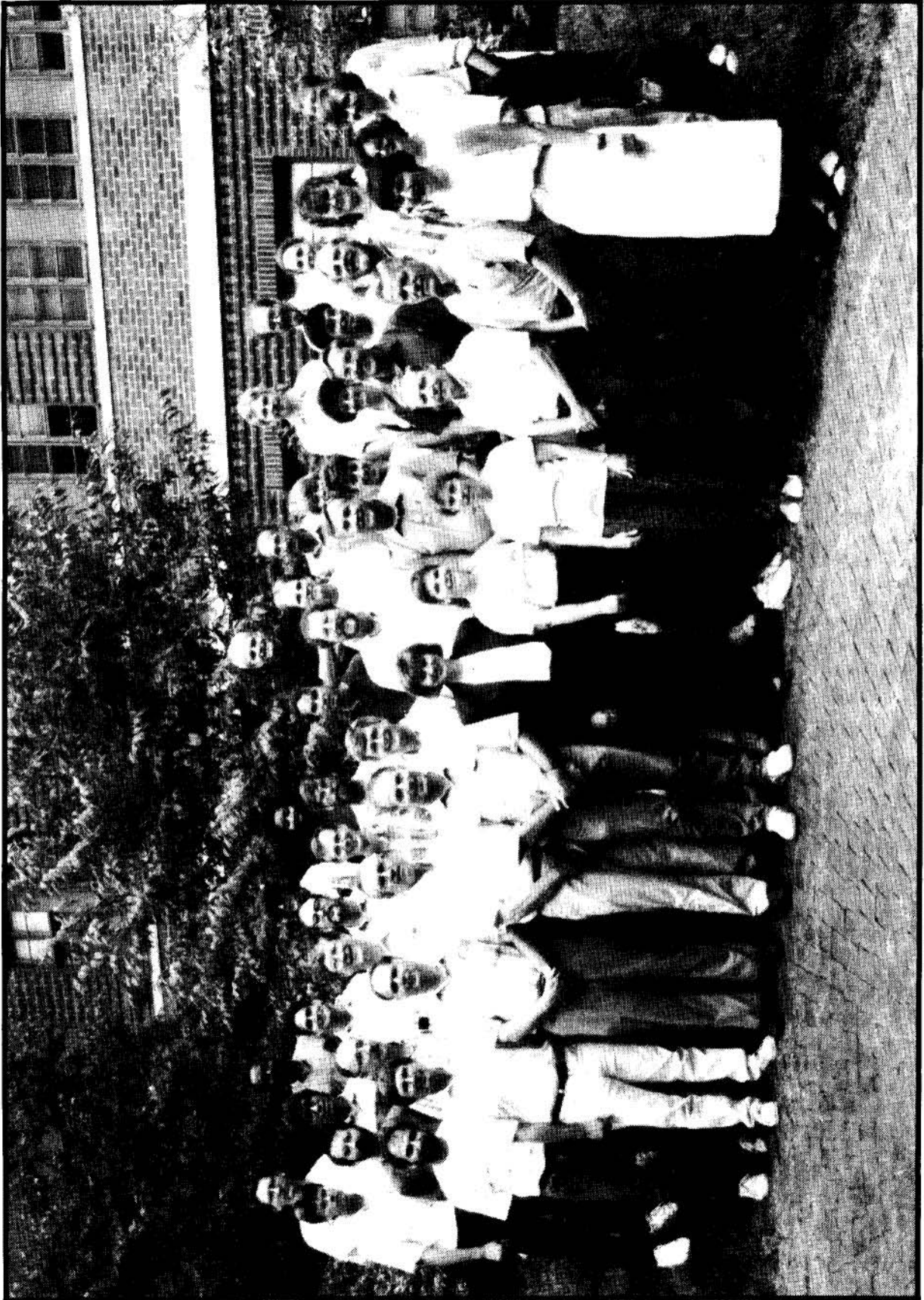
The prep lab, 307 Stakman, was among the last of the Stakman Hall antiquities to go. It was equipped almost entirely with cabinets, counters and autoclaves from the tottering Tower. It was a common source of supply of chemicals, glassware and other supplies for the entire Department. Post war affluence and greater lab space enabled project leaders to buy their own supply of chemicals, glassware, etc. and even hire their own slaves to wash the dishes. But the two autoclaves, one an original from the early 20's in the Tottering Tower, remained in use until August, 1985. The "big" autoclave was abandoned first because of leaking gaskets that no one had time to fix anymore. The small one, a later model, continued in use because it was more convenient for people with labs in Stakman and was easier to use than the high-tech sterilizers in Christensen Lab. Both were finally removed in August, 1985 and the room eventually became a research lab for Dr. Jones and Janell Stevens Johnk.

After the Migration, the Tottering Tower survived for another 30 years, occupied principally



by the Federal Rust Lab (CRL), which continued also to use the greenhouses behind the building. In August, 1971 Tottering Tower and greenhouses were razed to make room for additions to the agricultural library and classroom and office buildings.





### DEPARTMENT GROUP PICTURE

Front Row - left to right: David Rizzo, Richard Meronuck, William Bushnell, Bill Kennedy, James Kurle, Delores Huebner, Janell Stevens Johnk, Marguerite Clemens, Neil Anderson, Ernest Banttari and Judy Thies.

Second Row - left to right: Paul Zambino, John McCain, Kurt Leonard, Les Szabo, Robert Noyd, James Percich, Philip Larsen, Alan Roelfs, Jim Groth and Jill Pokorny.

Third Row - left to right: Gerald Amundson, Dean Malvick, J. Patrick Martinez, Nevin Young, Francis Pflieger, Robert Blanchette, Todd Burnes, Ann Arendt, Odette Holter, Javier Plasencia, Christine Newby and Sandra Gould.

Fourth Row - left to right: Paul Gieser, Christian Fatokun, Nancy Osterbauer, Sharon Aarons, Richard Zeyen, Dariush Danesh, Sarah Jensen, Gilbert Ahlstrand, Elwin Stewart, Linda Kinkel and Elizabeth Ozmon.

Missing: Faculty - Clyde Christensen, Carl Eide, David French, Roger Jones, Thor Kommedahl, Sagar Krupa, Benham Lockhart, David MacDonald, Donald McVey, Chester Mirocha, Thomas Nicholls, Darroll Skilling, Ward Stienstra, Roy Wilcoxson and Carol Windels.

Professional Academic - Cynthia Ash, Dean Herzfeld, David Long, Bruce Potter and Weiping Xie.

Vititing Scientist - Dionicio Alvarado, Mervat El-Wahab, Lalitha Kumar, Desiree Menancio-Hautea, Marge Palmer and Yi-Chun Xu.

Graduate Student - Irshad Ali, Nora Altier, Ligia Ayala, Jan Erick Backlund, Eric W. A. Boehm, Mohamed Bouhida, Junping Chen, Timothy Clark, Eric Eckwall, Julio Huerta-Espino, Dehong Jiang, Kathryn Kromroy, Rodney Kuehn, Kuo Chih Lin, Daqun Liu, Brent McCallum, Tarkus Suganda, Richard Woodward and Bruna Bucciarelli.

Civil Service - Dann Adair, Erik Bieber, Samuel Boutin, Grace Bucher, Roxanne Denny, Debra Baden Drange, John Haight, Bryan McCullough, Connie Post, James Rowe, and Monica Wallace.

Federal Civil Service - Vickie Brewster, David H. Casper, Mark Hughes, Martha Musil and Rosalind Richards.

Editors note: The 1991 departmental photo is the first of what we hope will be an annual group picture in each edition of the *Aurora Sporealis*. Special thanks to our photographer, E. Stewart.

**OLD TIMERS**

Three Old Timers got into Time magazine (August 19). They are **Bent Skovmand**, PhD 1976, **Carlos Ochoa**, MS 1955 and **Norman Borlaug**, PhD 1942. The article entitled "Will We Run Low on Food?" dealt with the world food supply and emphasized particularly the importance of preserving the genetic diversity of plant life and the dangers of widespread use of similar varieties - an old story to plant pathologists.

Bent, plant pathologist with CIMMYT in Mexico, was cited for discovering a strain of wheat resistant to aphids. Borlaug's famous wheats were mentioned and there was a picture of Carlos Ochoa examining a potato plant. Carlos, a plant explorer with the International Potato Center in Peru, has described several new species of *Solanum*. He has recently published a book "The Potatoes of South America: Bolivia". Illustrations in the book include about 25 colored reproductions of paintings of *Solanum* spp. The Ag library at Minnesota bought a copy of the book: \$140.

**Arne Skytt Andersen**, MS 1960, informed us that his address now is: Horticulture Section, Department of Agriculture, Rolighedsvej 23, Dk 1958 Frederiksberg C, Denmark. He writes: "As you may know from other archival material it is about thirty years since I left Minnesota with a MS that strangely enough dealt with rust of wheat. After that I have had very little to do with either of those two lively organisms. My minor was horticulture. So when the opportunity arose (after 25 years in plant physiology) to pursue these interests in a better job I moved to the horticulture department as professor of horticulture. Denmark has a very advanced greenhouse industry and produces two hundred million flowering potted plants per year for distribution to all of Europe. This requires a great deal of research in the "keepability" of various plants and flowers which is my main field of interest along with propagation and growth regulation. Keep up the good work and special greetings to Eide who was the only person I recognized in the latest issue (of Aurora)".

**Flavio Lazzari**, PhD 1990, who returned to his home in Brazil in December 1990 wrote to **Cheryl Engelkes**, PhD 1991, telling, among other things: "The first two weeks we were very tired. The moving took all the energy available plus the energy in reserve. Our books are arriving O.K., no problems at all. You know how much we love some books, they are part of our experience and without them I feel naked professionally. I'm trying to start my own company but the Brazilian economy is in bad shape. Inflation  $\pm 17.0\%$  per month and our salaries are really low compared with the salaries that you can easily get in the U.S. It took a while to clean our house. . .with time and patience things will fall in order again. Greetings to friends from MN. I miss you." Flavio.

**Maria de los Angeles Schroeder** in a letter to Carl and Mrs. Eide remembers: "This day is my wedding anniversary. I got married to **Harry William Schroeder**, PhD 1955, on Friday, 7 December 1951 at Calvary Presbyterian Church, Minneapolis, MN at 3:00 PM, and you were there at the wedding ceremony; but you do not know some funny details which I am about to let you know. My mother Elna made my wedding dress with a 25 inch train. I did show the dress to Helen Hart and she informed Dr. Stakman about the train, so Dr. Stakman called me on Thursday 6 December 1951 at 7:00 PM to ask me as a favor to cut the wedding dress train. He had offered to act as my father at the wedding, so he told me: "I am afraid I am going to stumble walking through the aisle with you, so you have to cut the train." At 7:30 PM Laura Hamilton came to take me to the house of some friend of hers. This was a very nice lady. Laura had arranged with her to cut the train. I picked up my wedding dress at 1:00 PM on Friday, 7 December and I rushed to Calvary Presbyterian Church. I had to iron all the dress and get ready for the ceremony. Everything went well thank goodness." Maria Schroeder.

**W.E. Sackston**, PhD 1949, and **Lois Sackston**. For those who know us both, a status report. I was laid up for three months in autumn 1989 with back problems. I am still aware every day that my back is

no longer 40 years old, but was able to attend a symposium in the USSR in June-July, drive to the APS/CPS meetings in Grand Rapids in August, and go hunting sharptail grouse and Hungarian partridge in Saskatchewan in October, and continue research, with NRC grants. Lois had a session in hospital with her heart in autumn 1989, and a quadruple bypass in March 1990. The surgery went well, but she suffered a stroke the next day, which left her paralyzed on the right side and unable to talk. Recovery began rapidly, and she is now back to normal and doing everything almost as before, except that she has still not recovered all her strength, so takes things slower, and has to rest more. Please give my very warmest regards to Carl Eide, Clyde Christensen, and any others I know.

**Craig Grau**, PhD 1975, became Chairman of the Department of Plant Pathology at the University of Wisconsin (Madison) on January 1, 1991. Craig moves up from his position as Associate Chairman. He succeeds Douglas Maxwell, who returned to research and teaching. Our best wishes to Craig on this important appointment!

**Robert Goth**, PhD 1961, and **Monty D. Harrison**, PhD 1961, organized the first national workshop on bacterial ring rot of potatoes, held in Denver, CO, April 24-25, 1990. It was attended by 26 scientists including **Ken Knutson**, PhD 1960 and **Gary Franc**, MS 1982. Bob Goth is with the Vegetable Laboratory, USDA-ARS at Beltsville, MD and Monty Harrison is in the Department of Plant Pathology and Weed Science, Colorado State University. He retired July 1, 1990.

**Gary Franc**, MS 1982, accepted a position as Assistant Professor at the University of Wyoming, July 1991. Gary has been Research Associate at Colorado State University where he received the PhD in 1988, Monty Harrison, adviser. He received the National Potato Council Auxiliary Scholarship for his work on potatoes and his dissertation research (on *Erwinia carotovora*) was featured on the children's TV program "Mr. Wizard" as well as CNN's Science and Technology Week".

**Harrison L. Morton**, PhD 1962, was made Associate Dean of the School of Natural Resources at the University of Michigan in 1990. It is the nation's oldest school of natural resources with a faculty of 35 and 35 staff. Harry has been at MU since 1966. His research has been on diseases of ornamental, shade and forest trees. He has also held a number of administrative and leadership positions, including that of chairman of the Forestry

Department and its succeeding unit, the Fisheries and Wildlife Program.

**Edward E. Butler**, PhD 1954, retired in 1990 from the University of California (Davis) after 36 years in the Department of Plant Pathology where he did research on post-harvest diseases of fruits, fungal interactions, speciation and sexuality. Ed was an outstanding teacher. To quote Phytopathology News "Butler has advanced science through a lifetime of teaching and challenging interactions with graduate students". He received several awards for his teaching. Ed will continue his research and teaching in mycology and biological control of root pathogens.

**Richard D. Durbin** retired in 1991 from his position as Research Leader of the USDA Unit on Plant Disease Resistance Research and Professor in the Department of Plant Pathology in the University of Wisconsin. Durbin holds the PhD from the University of California, Berkeley, 1957. He was Assistant Professor in the Department of Plant Pathology, University of Minnesota, 1958-1962, where his major interest was the physiology of disease.

**Carlos Ochoa**, MS 1955, has been selected to receive the 1991 Frank N. Meyer Medal for Plant Genetics Resources Award by the Crop Science Society of America. The award will be made October 29, 1991 in Denver, CO at a CSSA luncheon. Carlos is a plant explorer and breeder at the International Potato Center in Peru and has made many trips into the Andes mountains and described a number of new species of *Solanum*. He has written several books, the latest being "Potatoes of South America: Bolivia".

**Monty D. Harrison**, PhD 1961, retired from his position as Professor at Colorado State University July 1, 1990. He has been on the faculty at CSU for 29 years, including 6 years as Associate Dean. When he retired a scholarship in the names of Monty and Jeanice Harrison was established in the Department of Plant Pathology and Weed Science at CSU.

**Pat Rincker Donald** is a full time faculty member working on nematodes at the University of Missouri where husband Bill works on weed management for the USDA. **Bill**, MS 1974, recently published a monograph on weed control in wheat. Pat was Junior Scientist in the Department at Minnesota 1973-74. Bill and Pat have two teen aged sons.



**Roland (Rolly) Line**, PhD 1962, received the Washington Crop Improvement O.A. Vogel Award for his contributions to wheat improvement in the Pacific Northwest. Rolly is pathologist with the USDA at Washington State University where he does research on cereal rusts.

**Vera Koerper Graham** was honored last year by the Association of Parents and Teachers in Florence, SC. The honors included a donation of \$1,000 to the Vera Graham scholarship fund. An article in the Florence paper lists her many volunteer services such as 24 years on the school board, president of the PTA, and help with the school nursing program and environmental education. Vera, with a degree in botany, worked with J. G. Leach in the 1930s when he was doing research on insects and plant diseases. Her histological preparations were superb. She married **T. W. Graham**, PhD 1942. Tom was Pathologist with the USDA at the PeeDee Station in Florence, where he worked on tobacco diseases before he retired.

**Dexter Douglas**, PhD 1968, an entrepreneur in the potato seed business, has been applying genetic engineering in an effort to produce a Burbank Russet resistant to leaf roll and X and Y viruses. He works with biotechnical personnel from California, Sweden and locally. Dex is also kept busy as an expert witness in lawsuits involving potato diseases (mostly ring rot). He reports that business is good and that he enjoys working with potatoes.

**T. C. Loh**, PhD 1933, is still Technical Advisor at the Guangdong Institute of Microbiology, Guangzhou, China, although he admits that he doesn't go to his office every day, but does business by phone. He says the Institute is using genetic engineering to produce superior mushrooms and that he has to keep up with the literature to understand what they are doing. Loh still does his calisthenics to keep fit.

**Rod and Mary (Sortland) Moberg** live in Lake Elmo, MN. Rod is a horse veterinarian at the Stillwater Veterinary Clinic. The Moberg downstairs family room was turned one night into an intensive neonatal care unit for a premature foal. This sort of thing keeps life from being dull. Mary is Plant Pathologist and REACH AgInfo Manager for Cenex/Land O'Lakes. Son Brandon is two and Brian Carlton was born May 11, 1991.

**Paul and Kelly Karelis** are now living in Worthington, MN where Paul has a teaching position. Paul and Kelly moved in 1990 from Markesan, WI.

**Martha Roane**, MS 1946, reported that as of December 1990 nearly 5000 copies of her compendium on Rhododendron Diseases had been sold as well as about 500 of the monograph on *Endothia*. Husband **Curt**, PhD 1963, retired, keeps busy. Among other things he is writing a history of plant pathology in Virginia.

**Dr. A. Abu-zinada**, MS 1967, expresses fond memories of graduate school days in Minnesota and extends best wishes to the department, especially to former advisors Eide and Kennedy. In 1986, Abdua Aziz became Director General of the National Commission for Wildlife Conservation and Development for the Kingdom of Saudia Arabia. He and family (6 children) reside in Riyadh.

#### APS ADDITION DEDICATED

An 11,000 square foot addition to the national headquarters building of the American Phytopathological Society at 3340 Pilot Knob Road, Eagan, MN (a few miles south of St. Paul) was dedicated March 7, 1991. The facilities are shared by the American Association of Cereal Chemists.

The new wing was named in honor of **Raymond J. Tarleton**, Executive Vice President, who has been with the APS for 27 years. Ray will retire January 1, 1992 and will be succeeded by **Steven C. Nelson** as Executive Vice President of the APS and the AACC. Nelson has served the APS and AACC for 18 years, holding key management positions. He is a graduate of Hamline University, St. Paul and holds MA and BA degrees from Northern Illinois University, DeKalb.

#### MINNESOTA GETS MYCORRHIZAE CULTURES

The International Culture Collection of VA Mycorrhizae (INVAM) was transferred to the Department September 19, 1990 from the University of Florida where it was established by Dr. Norman Schenck in 1985. Dr. Schenck retired January 1, 1991. At Minnesota the collection will be under the supervision of Dr. Frank Pflieger. It consisted of 166 isolates representing 40 species from six genera and is being preserved cryogenically.

## LOCAL NEWS

**Robert Nyvall**, PhD 1969, resigned as Superintendent of the North Central Agricultural Experiment Station, Grand Rapids, MN effective April 1, 1991. Bob will remain as a Plant Pathologist at the Grand Rapids Station and will do research on wild rice, biocontrol of aquatic weeds, and diseases of small fruits and vegetables. We're delighted to welcome Bob back to research and wish him well.

**Darroll Skilling**, PhD 1968, broke both his leg and ankle while painting his home July 1, 1991. Darroll is in a walking cast and back to work full time (as of mid August) and reported that he will begin therapy next week. He said he's still not afraid of heights but that his wife would kill him if he got up on a ladder now. Were all pulling for a speedy recovery.

**Dann Adair**, Research Plot Coordinator, was awarded the BS in Integrated Pest Management at the June, 1991 Commencement. Before coming to Minnesota in 1982 Dann had earned about half of the credits required for the BS at Southern Illinois University and the University of Illinois, Urbana. He earned the rest of the required credits at the University of Minnesota while working for the Department.

**Cheryl Engelkes** and **Janell Stevens Johnk** attended a Rhizoctonia workshop held August 3, 1990 at Michigan State U, just before the annual APS meeting at Grand Rapids.

**Carol E. Windels**, PhD 1980, Associate Professor at the Northwest Experiment Station, Crookston, MN was elected Councilor-at-Large by the American Phytopathological Society effective August, 1990.

## VISITORS - 1990

**Angela Carda**, a Senior at Bagley High School, spent two weeks in Dr. Banttari's lab as a participant in the 1990 Research Apprenticeship Program. She learned virus detection techniques, including the ELISA test.

Also working on summer science research programs were **Quynh Anh Nguyen** and **Jamel Anderson**, who studied DNA technology in the laboratory of Dr. Nevin Young. Quynh Anh was a student at Robbinsdale-Cooper High School and Jamel was from Chicago. He entered the COA in September 1990.

September 7. **Bryan Shearer**, PhD 1974, Senior Scientist, Department of Conservation and Land Management, Western Australia. Bryan presented a seminar on "Impact of Phytophthora Root Rots in Native Plant Communities of South-Western Australia - A Serious Conservation Problem".

September 12. **Tom Nicholson**, an Old Timer who spent a sabbatical year here in the mid 1950's, had attended the International Mycorrhizal Conference in Montana and was on his way home.

Old Timer **Dr. K. D. Paharia**, PhD 1956, returned for a visit on October 25 and 26, 1990 and brought Mrs. Paharia with to show her the University where he had obtained his doctoral degree some 34 years previously and which she knew only through his letters. Dr. Paharia had just retired as Director of the All Indian Plant Protection Institute, Delhi, India.

continued, p. 5

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## GRADUATE STUDENTS SHINE ON GRE'S

The Graduate Record Examination (GRE) is a nationally used academic aptitude and achievement test taken by college graduates seeking admission to graduate schools. It is one of several indicators of potential success in graduate education. The GRE has three components; verbal, quantitative, and analytical. A specialized subject matter examination is also offered and taken by some students.

The current Department of Plant Pathology graduate student body is one of the strongest ever in GRE performance. In the 1990-91 academic year Departmental students with United States citizenship (n=20) averaged 621 in verbal, 610 in quantitative, and 628 in analytical portions of the

GRE, for total average score of 1853 for the examination. Thus this student body, on average, is clearly in the upper 20% of all college graduates taking the GRE examinations. GRE total scores ranged from 1520 to 2260.

In an era of negative comments concerning the U. S. educational system and declining test scores it is especially pleasant to have a graduate student group as well-prepared as the current one. It also bodes well for the ability of departmental faculty and programs to attract high quality graduate students. Alumni play an important role in the quality of graduate student applicants, since many students come to the Department as a direct result of alumni referrals. Graduate education at Minnesota is on-track, and the future looks very bright.

*R. J. Zeyen*

## VISITORS - 1991

January 8. **George Hudler**, MS 1973, Professor of Plant Pathology at Cornell University, was a guest at an informal discussion of a new course he is teaching at Cornell. It is called "Magical Mushrooms and Mischevious Molds". According to the Cornell Plant Pathology Newsletter, the course drew 165 students.

January 16-21. **Eduardo Espejo**, a graduate student in Chemical Engineering, Catholic University, Santiago, Chile, worked with Bob Blanchette on the cytology of wood decomposition.

January 22. **Kathy Widen**, PhD 1980, was a speaker at a meeting of Women in Science and Agriculture. She discussed her perspectives on building a career as a professional working out of her home. Kathy lives and practices her profession as consultant in Stillwater, MN.

January 31. **Dr. Yehoshua Anikster**, Tel Aviv University, Israel.

**Dr. Eugene Saari**, PhD 1966 has been to see us twice this past year. In February 11-15, 1991 Geno attended the North American Rust Workers Conference at the Cereal Rust Lab and again July 18 and 19, 1991 to work on a Rust Manual with Alan Roelfs. On his way home from an extensive tour of the USSR, where he studied their wheat production problems, he visited with Old Timer **Leif Sundheim**, PhD 1963, in Norway.

March 25. **Michael Boosalis**, PhD 1951. Mike retired in 1989 from his position as Professor of Plant Pathology at the University of Nebraska where he was Department Head from 1964 to 1984. He was in the Twin Cities with Mrs. (Helen) Boosalis, who was attending a meeting of the American Association of Retired Persons (AARP) in Minneapolis. Helen is very active in the organization.

April 9. **Professor Emeritus Howard Bissonnette**, PhD 1964, attended the 10:00 AM coffee break. Howard and Karwyn returned from Florida about March 1. They sold their home in St. Paul where they had lived for about 25 years and are now living in an apartment north of the campus. Besides the usual sailing, fishing, and beach walking in Florida, Howard employed his time carving miniature horses from basswood. Karwyn paints them. They will spend some time at their home on Big Bass Lake in northern Minnesota.

May 3. **Fred Baker**, PhD 1981. Fred has been in Oregon during the past year on sabbatic leave from the University of Utah. He was on his way to Winnipeg to finish up some work on dwarf mistletoe that was started when he was in Minnesota.

June 12. **Abdul Sheikk**, Plant Pathologist from Pakistan. He conferred with Professors Lockhart and Mirocha.

June 14. **Dr. Wong Shu Sun**, Associate Scientist, Magnetic Materials Lab., Industrial Research Institute, Taiwan, conferred with **Dr. John McCain** concerning fungi growing on computer diskettes.

June 17. **Dr. John Lacey**, Plant Pathologist at the Rothamsted Experiment Station, England, conferred with Professors Mirocha and Meronuck on grain storage and mycotoxins.

June 18. **Milton Petty**, PhD 1940, visited old and new friends in the Department and enjoyed the balmy Minnesota weather. Milt retired in 1977 from California State University, Long Beach and now lives at San Diego, CA.

June 20. **Dr. Wenche Langseth**, Chemist, Associate Professor at the Veterinary School, Oslo, Norway. Dr. Langseth discussed mycotoxins with Dr. Mirocha.

June 24. **Dr. Anne Kubelik** of the Central Research and Development Department, DuPont Experimental Station, Wilmington, DE visited the Cereal Rust Lab for an interview with Dr. Szabo. She also gave a seminar on "Molecular Technologies for Analysis of Fungal Genomes".

June 24. **Dr. Timothy Carver** of the Institute for Grassland and Environmental Research, Wales, arrived to spend two weeks doing research on disease resistance with Dr. Zeyen. Under a two year agreement with the North Atlantic Treaty Organization Scientific Exchange, Tim and Dick will make occasional visits to the other's lab in Wales or Minnesota. Tim was a Visiting Scientist in the Department in 1981-82. His wife, **Angela**, worked as a Secretary in the Plant Pathology Administrative Office.

June 24. **Dr. Mark Robbins**, also of the Institute for Grassland and Environmental Research, spent three days working in Dr. Zeyen's lab.

July 1. **Dr. Charlotte Swertz** of the Department of Plant Breeding, Agricultural University, Wageningen, Netherlands, spent July 1-19 working in the Cereal Rust Laboratory.

July 9. Two representatives of the Asian Vegetable Research and Development Center (AVRDC) Shanhua, Taiwan visited the Department July 9-12, principally to confer with Dr. Nevin Young. They were **Dr. Romeo Opena**, Head of the Crop Improvement Program at AVRDC and **Dr. Glen Hartman**, Plant Pathologist. Dr. Hartman graduated from the U of M in 1978.

July 27-August 1. **Dr. R. P. Thakur**, Senior Plant Pathologist in the cereal program for the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). His host was Dr. Kurt Leonard.

August 2. **Myra Smart** called and visited with friends in the Department including Bob Blanchette, whom she knew at Washington State University. Myra, driving a 1991 Chev pick-up, was on her annual tour of Wisconsin, Minnesota and North Dakota to visit relatives and friends. Myra majored in Horticulture at the U of M and worked for several people in plant pathology in the 1950s before moving to WSC where she also worked in plant pathology. She retired in 1982 and now spends her leisure botanizing, mountain climbing and travelling.

August 15. **Lucille Abler** came to help Dr. Eide celebrate his birthday (August 20). Lucille was Secretary in the Plant Pathology Office during the 60's before taking a better job in the Department of Animal Science. She retired several years ago.

August 19. **H. D. Thurston**, PhD 1958 made a short visit at about coffee time. Dave was in St. Paul to visit his son, daughter-in-law and twin grandsons, aged 4. As professor of plant pathology at Cornell University he spends much of his time participating in the international programs and teaching courses in that field. He recently started a very popular course in traditional agriculture and has written a book on that subject that will be published in October.

August 23. **Alfonso Castronovo**, MS 1954, of Argentina, came to coffee and was given a tour of the Department by Dr. Larsen. Alfonso who has been retired since 1979, came to the campus to confer with a friend in Agricultural Economics about a proposed book on "Planning Agricultural Technology, Innovation and Transfer".

## OBITUARIES

**Harold H. Flor**, PhD 1929, died early in August, 1991, at Wichita, Kansas. He was born May 27, 1900 in St. Paul, MN and received all of his degrees at the University of Minnesota although he spent one academic year at Iowa State College. Flor was Assistant Plant Pathologist at Louisiana State University, 1926-1929, working on root rot of sugar cane. After receiving the PhD he became Associate Plant Pathologist, USDA at Washington State College, now W.S.U. In 1931 he was transferred by the USDA to North Dakota State University to work on flax diseases. He remained there until his retirement.

Flor was famous for his research on flax rust, *Melampsora lini*. By studying the genetics of the host and the pathogen simultaneously he arrived at his famous "gene-for-gene" hypothesis that has since been applied widely to other host-pathogen systems.

He received numerous honors and awards including the Minnesota Regents' Outstanding Achievement Award (1962), The Stakman Award (1967), Honorary Doctor of Science, North Dakota State University and the Superior Service Award, USDA.

Mrs. Flor (Iva) died about a month before Harold. They are survived by a daughter.

Last year the Flors made a generous gift to the Department of Plant Pathology for student fellowships.

**Salvatore Ritchie**, 86, died of cancer August 17, 1991. Old Timers who were in the Department before 1972 will remember "Sal" as the cheerful man who delivered mail to the Division offices on the St. Paul Campus. He didn't drive a truck but carried the mail in a huge leather bag with a strap over his shoulder. Sal served 45 years at that and similar jobs and when he retired in 1972 the Ag campus threw a big party for him. He was probably the best known person on the campus, including the dean. Sal is survived by his wife, Katherine, a son, David and a brother, Michael.

**John R. Vaughn**, PhD 1947, died July 4, 1991 at Sun City, AZ. John was born September 10, 1917 at Rocky Ford, CO and graduated from Colorado State College (now CSU) in 1938. After receiving the MS in plant pathology at Minnesota he took a position as extension plant pathologist at the University of West Virginia.

He was called into the armed forces in 1941 and was 1st lieutenant in the 1st Armored Division

in Italy. He was taken prisoner by the Germans, but escaped while being taken to Germany in a cattle car, making his way back to the 1st Armored at the Anzio beach head. He was awarded the Silver Star.

In 1943 John returned to West Virginia and in 1946 was made extension plant pathologist at Michigan State U. In 1951 he became Professor of plant pathology at the University of Wyoming, where he was made Assistant Dean and Acting Dean of the College of Agriculture in 1958.

John became interested in an Afghan program sponsored by the U. S. government and the U of Wyoming and in 1960 went to Habul Afghanistan to direct university projects in agriculture. In 1971 he went to Aleppo, Syria with the Ford Foundation to develop a university there, but had to move to Beirut because of the Arab-Israeli war. Later foreign assignments took him to Iran as advisor to the Iranian agriculture director.

Returning to the U. S. in 1973, John was appointed to the staff of the International Bank for Reconstruction and Development as an agriculturist in the Agriculture Division, Europe, Middle East and North Africa (World Bank). He retired from the World Bank in 1982 and moved to Arizona.

John is survived by his wife, Dorothy, three daughters and eight grandchildren.

**A. W. Henry**, PhD 1923, died December 27, 1988 at Edmonton, Alberta. Henry was born July 20, 1896 at Fredericton, N. B. He was awarded the B.S.A. in 1917 and the M.S.A. in 1920 at the University of Saskatchewan. He came to Minnesota in 1920 and was on the faculty, teaching and doing research until 1926, receiving the PhD in 1923. His research at Minnesota was principally on flax rust on which he published several papers.

After a year in England and Europe on a Rockefeller Foundation Fellowship, Henry took a position as Assistant Professor of agronomy at the University of Alberta. There he began teaching plant pathology and this led to a distinguished career in teaching, research and extension work in plant diseases. After his retirement in 1962 Henry took an active role as diagnostic plant pathologist in the Crop Clinic Laboratory of the Alberta Department of Agriculture. He received many honors and is survived by a son, Donald.

**John F. Tuite**, PhD 1956, Professor of plant pathology at Purdue U., died at Lafayette, IN July 7, 1991 after having leukemia for seven years. John was born at Bronx, NY November 23, 1927. He held the BS in botany from Hunter College, New York

City. At Minnesota he earned the MS in 1953 and the PhD in 1956.

John joined the faculty at Purdue in 1956 where, besides teaching and doing research he authored several books on research, laboratory methods and teaching in plant pathology. He served in the army and was stationed in Japan 1946-47. He is survived by his wife, Camille, four daughters and two sons.

**Edward K. Vaughan**, PhD 1937, died January 3, 1990 at Corvallis, OR. He was born November 16, 1908 at Las Vegas, NM. Ed received the BS in biology from New Mexico State College in 1929 and the MS in plant pathology from Oregon State University in 1932. He took graduate work in plant pathology at the University of Minnesota in 1932-33 and in 1936-37.

Ed had a varied career between 1929, with a BS, until 1947 when he became Professor of plant pathology at Oregon State. That career included quarantine inspector at El Paso, TX, high school teaching at Las Cruces, NM and work with the USDA at Tucson, AZ, New Brunswick, NJ and Tifton, GA. He was professor at Virginia Polytechnic Institute, 1941-44 where he was in charge of the graduate program. (Curt Roane was his first graduate student).

While at Oregon State he was Guggenheim Research Fellow in the Netherlands, 1954-55 and Senior Research Fellow at the Plant Disease Division of the Department of Scientific and Industrial Research in Auckland, NZ, 1964-65. After retiring in 1974 he did research in Iran, 1974-76.

At OSU Ed's research was principally on diseases of vegetables and small fruit crops. He was sincerely interested in the problems of the growers and did everything he could to solve them. He was an effective teacher and advised 21 graduate students, as well as taking an active part in departmental and professional affairs.

**Richard R. Nelson**, PhD 1954, died at his home in Naples, FL April 28, 1991. Dick was born in Austin, MN May 23, 1926. He attended St. Olaf College, St. Cloud Teachers College, Luther College at Decorah, IA and Augsburg College, Minneapolis, where he was awarded the BA in 1950. He served in the army 1944-45.

Dick was Research Fellow at Minnesota, 1954-55, USDA Plant Pathologist and Adjunct Professor at North Carolina State U. and in 1960 Professor of plant pathology at Pennsylvania State University and Senior Member of the Graduate Faculty.

Dick was considered a world authority on genetics and inheritance of plant pathogenicity in fungi. His contributions were philosophical as well as factual, especially in the area of population dynamics. He was a highly motivated and committed teacher and was much in demand as invited lecturer in the U. S. and many parts of the world. He was named Evan Pugh Professor at Penn State in 1974, a position from which he retired May 1, 1985.

He is survived by his wife, Sally, a daughter and three sons.

**Howard W. Johnson**, PhD 1928, died at Greenville, MS June 1, 1991. He was born January 25, 1901 at Columbus, OH. Johnson graduated from Ohio State University with BA in botany in 1923 and was awarded the MS in 1924. He took graduate work at Minnesota 1926-28, with the rank of Instructor, 1927-28. After teaching botany at Louisiana State for two years he accepted a position in 1930 with the Bureau of Plant Industry, USDA at Arlington, VA. In 1946 he transferred to the Delta Branch Station at Leland, MS, where he worked on diseases of forage crops until he retired in 1969.

He is survived by a daughter and two sons.

**James A. Lyle**, PhD 1953, died November 13, 1990 at Auburn, AL. He was born in Lexington, KY September 19, 1916 and graduated from the University of Kentucky in 1940 with a major in Botany. He earned the MS in plant pathology at North Carolina State College in 1946. Dr. Lyle served as Assistant Professor 1947-53, Associate Professor 1953-54, Head Botany and Plant Pathology 1954-70, Head Botany and Microbiology 1970 until he retired at Auburn University. His research interests were in diseases of oilseed crops and the ecology of microorganisms and disease.

## **SOCIAL AFFAIRS**

### **International Christmas Party**

The International Christmas Party, held on Wednesday, December 19, 1990, was a success. Everyone brought a dish to pass and, needless to say, gave the festivity that international flair. There was a wide variety of food representing many countries: Lefsa (Norway), Swedish meatballs, Cassava cake (Philippines), quiche, Kevran rice (Korea), Olivia salad (Iran), cream puffs (France) and, it goes without saying, our traditional turkey and pumpkin pie.

Among our special guests were the spouses of some of our faculty and students, the "Old Timers" were represented by the Bissonnettes and Herb Johnsons. The recently graduated students were represented by Linda Treeful, PhD 1988, now working at the University of Wisconsin, River Falls, WI.

The entertainment was provided by Gib Ahlstrand and Nevin Young (recorder), Dann Adair (guitar), Marge Eerdmans (cello) and the enchanting sound of the harp played by the magical fingers of Liz Ozmon. The foursome was joined in, impromptu, with the beautiful voice of Laura Todd. The Christmas spirit was further enhanced with the decorated tree donated by Dr. David French and Linda Treeful's blinking, Xmas light shaped, earrings!.

*Odette M. Holter*

### **1990 Annual Plant Pathology Corn Roast (and Shed Warming)**

The Annual Plant Pathology Corn Roast was held on Saturday, September 8. Old Timers and department members gathered at Rosemount for the Annual Corn Roast and "Shed Warming". The new shed at Rosemount was finished just in time for the Corn Roast. Activities for the kids included: a pinata, gunny sack races, and hayrides. Now we have a warm dry place to go if by chance it rains for future Corn Roasts.

Roast pig and turkey were the top of the menu. The food was terrific, thanks to Jim Rowe and his wife Sondra. Special thanks to Jim Rowe, Kimon Karelis and Jim Karelis for all of their hard work in putting this event on for the Department.

*Debra Baden Drange*  
*Chairman, Social Committee*

### **Hawaiian Beach Bash**

This year's mid-winter party was a Hawaiian Beach Bash. The majority of the Department dressed up Hawaiian style, grass skirts and all. Entertainment by Don Ho was most enjoyable.

There was also a limbo contest, with a tie for first place going to Linda Kinkel and David Rizzo. They each received a coconut as their prize.

Shish kebabs were the main course, cooked by non-other than the Department Chef Jim Rowe. Fun was had by all.

Phil Larsen, Department Head was not entirely thrilled about having to sweep up sand after the party, but he did it with a smile and a little help from his friends.

## VISITING SCIENTISTS

**Dr. Kittisak Kiratiys-sngul** of the Plant Pathology Division, Ministry of Agriculture, Thailand, worked on virus characterization in Dr. Ben Lockhart's laboratory September 15-December 15, 1990. His visit was sponsored under a USAID-USDA program.

**Professor Hassan-Reza Etebarian**, on sabbatic leave from the Abourayhan Institute, Terhan University, Iran was Visiting Scientist from September 1990 to September 1991. He did research on *Fusarium culmorum* with Dr. Stewart and Dr. Wilcoxson. He left on August 20 and on August 8 there was a Farewell Tea for him.

**Dr. Christian H. Fatokun** from the Agronomy Department University of Ibadan, Nigeria arrived in September 1990 as Honorary Fellow in the Department for a period of two years. He is sponsored by a Rockefeller Foundation Fellowship and is working in Dr. Nevin Young's laboratory on RFLP mapping in *Vigna*.

**Dr. Richard C. Staples**, George McNew Scientist, Boyce Thompson Institute for Plant Research at Cornell University, worked in the Cereal Rust Laboratory with Bill Bushnell and Les J. Szabo during November 1990. Dr. Staples is a world authority in differentiation of infection structures to fungal pathogens. In the rust lab he worked on methods for genetic transformation of rust fungi.

**Dr. Gabriella Vizarova**, Institute of Ecobiology, Slovak Academy of Sciences, Bratislava, Cecho-Slovakia, was Visiting Scientist during November and December, 1990. She has spent many years

investigating the role of cytokinins in the powdery mildew diseases and came to Minnesota to work with Dr. Bushnell in the Cereal Rust Laboratory on the zeatin effect on the Development of *Erysiphe graminis* by using the "Coleoptile Mounting System". Her visit to the CRL was sponsored by the National Academy of Sciences, USA and the Slovakian Academy of Sciences.

**Dr. Girma Bekele**, on leave from Centro Internacional de Maize y Trigo (CIMMYT) arrived in May 1991 to spend six months studying scab of wheat under Minnesota conditions and investigate methods of detecting resistance to scab in the field and laboratory. Dr. Bekele got his PhD under **Harry Young**, PhD 1949, at Oklahoma State University.

**Dr. Lalitha Kumar** from the National Chemical Laboratory, Pune, India is a Honory Fellow in our Department. She came to us under a Rockefeller Foundation Fellowship and will be here for two years. Dr. Kumar will be working on genome mapping in tropical legumes in Dr. Nevin Young's laboratory.

**Dionicio Alvarado** from the Centro de Fitopatologia, Colegia de Postgraduados, Montecillo, Mexico, will be visiting the department for the next several months. He will be working with Bob Blanchette on several research projects and taking classes. His student training internship is sponsored by US AID. Dionicio has a Master's of Science degree in Plant Pathology and will be continuing his graduate education for a PhD. He also has worked as an Associate Scientist with Dr. Ma. deLourdes de Bauer, MS 1957, on many forest pathology projects during the past few years.

## VITAL STATISTICS

### Births

June 10, 1990. Paula Ann to Jean and Elmer Schmidt. All adoption papers are final.

December 21, 1990. Kellen Eric to Joseph and Shelley O'Brien. 6 lb, 9 oz.

January 10, 1991. Phillip Ross to Andre' and Laura Todd Abad. 9 lb, 5 oz.

April 1, 1991. Robert Michael to Jeanne and Peter Ciborowski. 7.5 lb.

April 29, 1991. Kayla Thorene to Andre and Jim Aronson. 6 lb, 13.5 oz.

May 11, 1991. Brian Carolton to Rod and Mary Sortland Moberg. 9 lb, 4 oz.

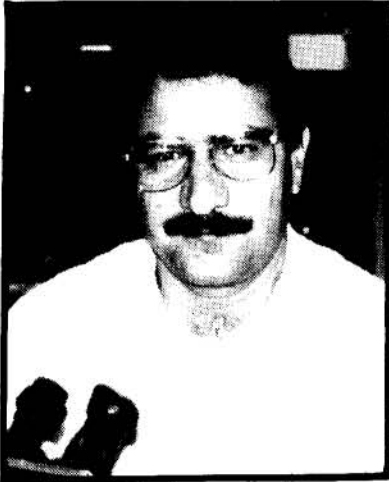
July 8, 1991. Kristal Implengan to Tarkus and Sri Suganda. 6 lb, 9 oz.

July 20, 1991. Heidi Eileen to Tim and Sharon Clark. 8 lb, 6 oz.

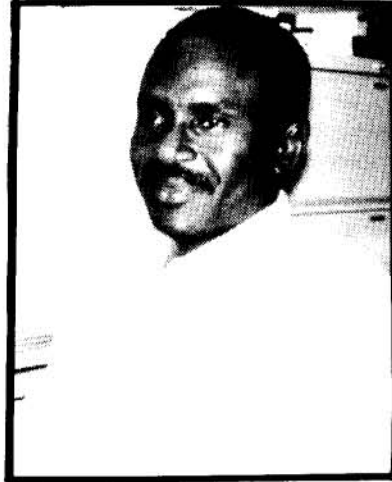
### Marriages

June 29, 1991. Claire Cardwell and Delane Duval, at Irving, Texas.

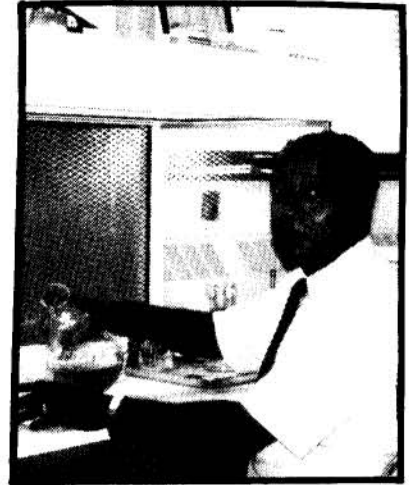
## VISITING SCIENTISTS



Professor Hassan-Reza Etebarian



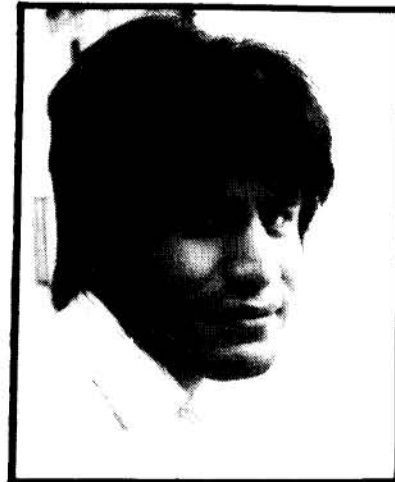
Dr. Christian H. Fatokun



Dr. Girma Bekele



Dr. Lalitha Kumar



Dionicio Alvarado

## HONORS

Mike Ostry, MS 1978, from our department was awarded the USDA Superior Service Award at ceremonies in Washington D.C. this past June. Mike's award was for developing the first workable system using somaclonal variation techniques to rapidly produce disease resistant forest trees. The trees produced from Mike's research have now been field tested for 6 years. The best somaclones have been outplanted at Rosemont for more intensive trials before being released to the public. Mike is Research Plant Pathologist with the Forest Disease Project at the USDA North Central Forest Experiment Station on the St. Paul Campus.

## KOMMIE RECEIVES E. C. STAKMAN AWARD

Dr. Thor Kommedahl, PhD 1951, was presented the E. C. Stakman Award on November 6, 1990. His lecture on receiving the award "The Etiology of Clutter in Scientific Literature" was both enlightening and entertaining and should be required reading for all academic administrators. Kommie just finished with his "last" student Dr. Laura Todd, August 7, 1991. The department continues to benefit from his almost daily presence. Thor is sharing his editorial expertise with the Minnesota Science Museum several days each week and he seems to be thriving during these emeritus days.



## 1991 DEPARTMENTAL AWARDS & RECOGNITION DAY

The annual Department of Plant Pathology Awards Ceremony was held on 23 May, 1991 in Borlaug Hall. This important day is set aside to recognize accomplishments of students, staff, faculty, friends and alumni. All members of the Department, and its friends and alumni were invited. Dr. Philip Larsen presided over the ceremonies.

Graduate student scholarship awards went to Ms. Janell Stevens Johnk (MS student) who was awarded the M. F. Kernkamp Scholarship, and Mr. Javier F. Plasencia (PhD student) who was awarded the Fred I. Frosheiser Scholarship. These scholarships are awarded on the basis of academic performance, scientific achievement, and departmental leadership. The Civil Service Awards of Excellence went to Elizabeth A. Ozmon and Connie J. Post for their outstanding contributions to the Department. The Distinguished Alumnus Award was given to Dr. John Dueck (PhD, 1971) for his scientific and administrative achievements in international agriculture. Drs. Edward E. Butler, Isaak Wahl, and Clifford L. Wilcox were recognized as Distinguished Friends of the Department, for their many contributions to the Department throughout their careers.

Staff and faculty members receiving recognitions and honors were: Mr. David Long, 20 year service recognition, USDA; Mr. Dean Herzfeld who received a Certificate of Appreciation for the National Pesticide Applicator Training and Certification Workshop; Mr. Bruce Potter for Outstanding Contributions to the Cooperative Agriculture Pest Survey Program; Dr. Carol Windels who was awarded the Minnesota Governor's Certificate of Commendation; and Dr. Richard Zeyen was recognized for his contributions in starting the Undergraduate Honors Program in the College of Agriculture. The Department has been very fortunate to have many experienced civil service staff members who contribute greatly to its success. The length of service of each of these important staff members was recognized and honored this year. The awardees, in order of length of service to the University of Minnesota in 5-year increments are: Delores Huebner-25 years, Connie Post-20 years, Debra Baden Drange-15 years, Gilbert Ahlstrand-10 years, Ann Arendt-10 years, Marguerite Clemens-10 years, Dann Adair-5 years, Pat Burnes-5 years, Todd Burnes-5 years, Marjorie Eerdmans-5 years, James Rowe-5 years and Elizabeth Ozmon-5 years. Drs. Les Szabo and Nevin Young, Molecular Genetics Workshop, Debra Baden Drange, Department Social Events, and Marjorie Eerdmans, United Fund Campaign Coordinator.

*R. J. Zeyen*

## SPORTS

### Annual E. C. Stakman Student-Faculty Softball Game

This year's game was played on 31 May, and was the 17th annual contest. The game was originally scheduled for the 17th of May, Stakman's 106th birthday, but was rescheduled due to rain. The great drought of the 80's was broken this May (ca. 12 inches of rain in May) so the game was played on a water-logged field. The faculty-staff team benefited greatly from the slippery conditions, hitting balls into wet areas where student fielders had great difficulty. The game was played with gusto, and the defensive gem of the game was a sliding one-handed catch by Richard Woodward of the student team. However, in the end, faculty-staff experience with slippery conditions (common in academia) paid off with an 8 to 4 victory over the student team. Everybody celebrated the end of a soggy, wet game by a picnic with appropriate refreshments provided by the E. C. Stakman Softball Game Endowment.

#### Faculty Staff Team

1. Dr. David Anderson - 2nd Base
2. Debbie Baden Drange - Catcher
3. Jim Matejas - Left Field
4. Dr. Roger Jones - Short Stop
5. Dr. Richard Zeyen - Pitcher
6. Dr. Philip Larsen - 3rd Base
7. Mary Matejas - Center Field
8. Dr. Donald McVey - 1st Base
9. Dr. Nevin Young - Right Field
10. Dr. Linda Kinkel - Short Fielder
11. Dr. Girma Bekele - Catcher

#### Student Team

1. Eric Eckwall - 3rd Base
2. James Kurle - Center Field, Right Field
3. Heidi Eckwall - 3rd Base
4. Nancy Osterbauer - Pitcher
5. Amar Elakkad - 1st Base
6. Richard Woodward - Short Stop
7. Paul Gieser - Pitcher, Short Fielder
8. Gary Foley - Left Field
9. Kathy Kromroy - 2nd Base
10. Javier Plasencia - Catcher
11. Janell Johnk - 2nd Base
12. Pat Martinez - Left Field
13. Cindy Ocamb - Catcher
14. David Rizzo - Center Field

Umpire - Dr. Ward Stienstra

Official Scorers - Sarah Jensen & Connie Post

*R. J. Zeyen*



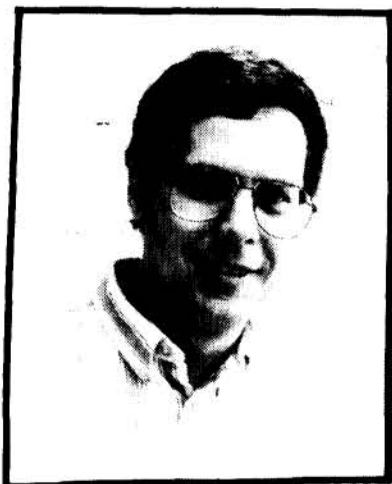
Odette M. Holter



Rosalind Richards



Sharon R. Aarons



Samuel Boutin

#### NEW EMPLOYEES

**Rosalind Richards** has been working as a Secretary for the Cereal Rust Laboratory since September 1990. She transferred from the University of Missouri and has been an employee with USDA/ARS for 14 years.

**Sharon R. Aarons**, a Research Fellow, has been working in Dr. Nevin Young's Laboratory since October 1, 1990. In her research she will be using molecular biology techniques to study soil disease pathogens and host resistance of tomato. Ms. Aarons received her M.Phil. degree in Biochemistry, University of the West Indies, Jamaica 1985 and completed her PhD degree with the Soil Science Department at U of M 1990.

**Samuel Boutin** was hired as a Scientist August 26, 1991. He will be developing computer software for use with the Plant Genome Mapping Database Initiative in Dr. Nevin Young's laboratory. He received a BSEE degree from the University of Michigan, a MSEE degree from Illinois Institute of Technology and a MBA from the University of Chicago.

**Odette M. Holter** became Senior Secretary and Receptionist in the Plant Pathology Administrative Office November 12, 1990. Odette attended high school in New Richmond, WI. Before coming to the Plant Pathology Department she worked as word processor operator for Higher Education Assistance Foundation (HEAF) in St. Paul.

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#### Recent Promotions!

**Andre' R. Abad**, from Assistant Scientist to Scientist, April 1, 1990.

**Todd A. Burnes**, from Assistant Scientist to Scientist, September 1, 1990.

**Marge M. Eerdmans**, from Junior Scientist to Assistant Scientist, August 16, 1990.

**Elizabeth A. Ozmon**, from Junior Scientist to Assistant Scientist, October 16, 1990.

**James A. Percich**, from Associate Professor to Professor, July 1, 1991.

**Connie Jo Post**, from Accountant to Senior Accountant, May 5, 1991.

*Delores Huebner*

## RECENT GRADUATE STUDENTS

Name, Academic Background,  
Starting Date, Adviser

Lin, Kuo-Chih. HS, Fu Hsing Senior High School, Taipei, 1980; BS, National Chung Hsing University, 1985; MS, National Chung Hsing University, 1987.

F 1991 Bushnell/Zeyen

Malvick, Dean. HS, Proctor High School, Proctor, MN, 1979; BS, Bemidji State University, Bemidji, MN, 1983; MS, Oregon State University, Corvallis, OR, 1987.

F 1991 Percich

McCallum, Brent D. HS, Glenlawn Collegiate Institute, 1983; BS, University of Manitoba, 1988; MS, University of Manitoba, 1991.

F 1991 Groth

Noyd, Robert K. HS, Glastonbury High School, Glastonbury, CT, 1973; BS, Central Connecticut State College, 1978; MS, Central Connecticut State College, 1981.

F 1991 Pflieger

Altier, Nora. HS, Damaso Antonio Larranaga, Montevideo, Uruguay, 1976; Ag. Eng., University of Uruguay, Montevideo, Uruguay 1983.

W 1991 Thies

Ayala, Ligia. HS, Sn. Francisco de Sales Quito, Espejo, Quito, Ecuador, 1975; BS, Catholic University of Ecuador, 1989.

F 1990 Lockhart

Chen, Junping. HS, Zhengding #1 Middle School, Hebei, 1978; BS, Agricultural University of Hebei, 1982; MS, University of Minnesota, 1989.

F 1990 Mirocha

Eckwall, Eric C. HS, Hopkins High School, Hopkins, MN, 1984; BS, University of Minnesota, 1990.

F 1990 Anderson

Rizzo, David M. HS, Wissahickon High School, Ambler, PA, 1979; BS, James Madison University, Harrisonburg, VA, 1983; MS, University of New Hampshire, Durham, NH, 1986.

F 1990 Blanchette

## ORAL EXAMINATIONS PASSED

## 1990

August 17	Flavio A. Lazzari	PhD final
November 26	Cynthia M. Ocamb	PhD final
December 12	German P. Hoyos	PhD final
December 10	Robert L. Hills	MS
December 18	Beatriz A. Perez	PhD final
December 31	Kosim M. Kardin	PhD final

## 1991

January 31	Daqun Liu	PhD prelim
January 31	Richard P. Woodward	PhD prelim
May 1	Cheryl A. Engelkes	PhD final
June 3	David R. Johnson	PhD final
June 27	Monica K. Wallace	PhD final

## SEMINARS

Plant Pathology Seminar, 8201. Monday, 3 PM, 365 Borlaug. Refreshments at 2:45. Fall Quarter, 1990

September 24. Timothy Clark. Pathogenesis-Related Proteins.

October 1. Paul Gieser. Pisatin Demethylase of Nectria, and Its Role in Phytoalexin Detoxification.

October 8. Eric Boehm. Bacterial Avirulence Genes: Host vs. Nonhost Resistance.

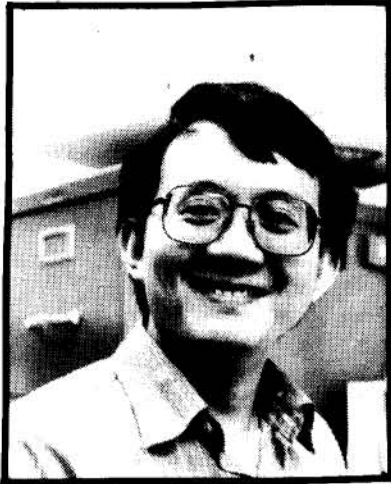
October 15. Richard Woodward. Application of Selected Molecular Techniques in Fungal Systematics.

October 22. Dr. Benham Lockhart, Plant Pathology. "Badnaviruses" A Proposed New Group of Double-Stranded DNA Plant Viruses.

October 29. Dr. Ralph L. Nicholson, Purdue University. Phytoalexin Synthesis in Sorghum, A Site Specific Phenomenon.

November 5. Cheryl Engelkes. Fungal Sclerotia: Dormancy or Dead End?

RECENT GRADUATE STUDENTS



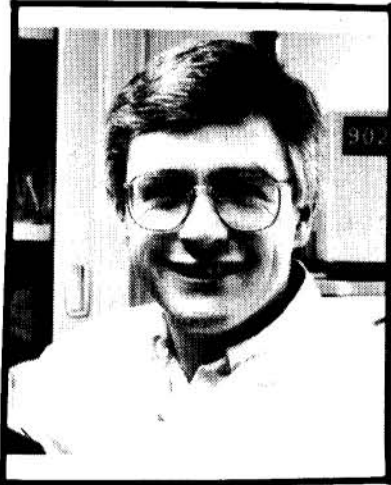
Kuo-Chih Lin



Dean Malvick



Brent D. McCallum



Robert K. Noyd



Nora Altier



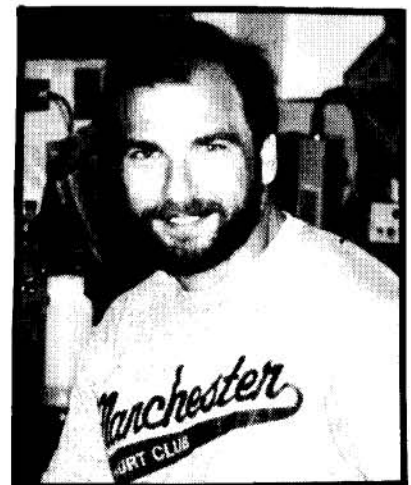
Ligia Ayala



Junping Chen



Eric C. Eckwall



David M. Rizzo

November 12. Dr. Richard Staples, Boyce Thompson Institute for Plant Research, New York. Molecular and Cellular Changes Induced in Pathogenic Fungi by Adhesion to a Surface.

November 19. Rita Kalis. Pathogenic Fungi on Lupins in Minnesota.

November 26. Tarkus Suganda. The Role of Infected Barley Seeds and Debris in the Epidemiology of Net Blotch Disease.

**Plant Pathology Seminar, 8201. Monday, 3 PM, 365 Borlaug. Refreshments at 2:45. Winter Quarter, 1991**

January 7. James Kurle. The Taxonomy of the Vesicular-Arbuscular Mycorrhizae: Mucorales, Endogonales, Glomales.

January 14. Nancy Osterbauer. Oak Wilt in Texas.

January 21. UNIVERSITY HOLIDAY, Martin Luther King Day

January 28. Dr. Lois Johnson, E.I. DuPont de Nemours & Co. Plant Pathology and Industry - A Researcher's Perspective".

February 4. David Rizzo. Spruce-Fir Decline: Wind, Rocks and Root Disease.

February 11. Dr. John Dueck. Agronomy and Crop Production in Rainfed Regions of Pakistan - A Canadian-Pakistan International Effort.

February 18. Daqun Liu. Streptomyces Genetics.

February 25. Eric Boehm and Jan Backlund. Characterization of the *Puccinia graminis* f. sp. *tritici* Genome.

March 4. Open

March 11. Test week - backup spot.

**Special Seminar Series. Spring Quarter, 1991**

April 8. Professor Kurt Mendgen, University of Konstanz, Germany. Differentiation-Specific Events During Infection Structure Formation. Host: Dr. William R. Bushnell.

April 10. Dr. Chris E. Caten, School of Biological Sciences, University of Birmingham, Birmingham, U.K. Molecular Genetics of the

Phytopathogenic Fungus *Septoria nodorum*. Host: Dr. Kurt J. Leonard.

April 15. Dr. Gregory S. May, Department of Cell Biology, Baylor College, Houston, Texas. Genetic Analysis of Mitosis in *Aspergillus*. Co-sponsored by the Department of Plant Pathology and Plant Molecular Genetics Institute. Host: Dr. Nevin D. Young.

April 29. Dr. John Zak, Department of Biological Sciences, Texas Tech University, Lubbock, Texas. Windows of Opportunity in Desert Ecosystems: From Root Regions in Woodrat Middens. Sponsored by University of Minnesota Microbial Ecology Program. Host: Dr. Linda L. Kinkel.

**Special Seminars**

September 28, 1990. Philip G. Williams, University of New South Wales. Axenic Culture of Stem Rust Fungi: A Model for VAM Fungi?

October 30, 1990. Dr. Ralph Nicholson, Professor, Purdue University. Functional Significance of the Conidial Mucilage of *Colletotrichum graminicola*.

February 11, 1991. Dr. Dallas Mills, Botany and Plant Pathology, Oregon State University. Role of Karotypic Variability in Physiologic Race Structure of Fungi.

February 14, 1991. Dr. Roland Line, USDA-ARS, Washington State University, Pullman, WA. Integrated Control of Wheat Rust in the Pacific Northwest.

April 25, 1991. Dr. David Sands, Montana State University. Biotechnological Approaches to Control of Weeds With Pathogens.

June 24, 1991. Dr. Anne Kubelik, Central Research and Development Department, DuPont Experimental Station, Wilmington, DE. Molecular Techniques for Analysis of Fungal Genomes. Host: Dr. Les J. Szabo.

July 16, 1991. Dr. Roger Hull, John Innes Institute, Norwich, England. Rice Tungro Virus Disease: Possibilities of Control by Non-Conventional Resistance. Host: Dr. Benham E. Lockhart.

**NINETY-SIX ADVANCED DEGREES GIVEN  
DURING THE DECADE OF THE 80's**

Before we get too far into the 90's we want to acknowledge our graduates of the 80's and to wish them all the best.

1980 -

<u>Name</u>	<u>Degree</u>
1. Gusti Sarbini	PhD
2. Philip H. Berger	MS
3. Barbara J. Christ	MS
4. Lois E. B. Johnson	PhD
5. Gregory C. Pratt	MS
6. Rachid Sayoud	MS
7. Dale L. K. Smeltzer	MS
8. Steven P. Swanson	MS
9. Katherine D. Widin	PhD
10. Carol E. Windels	PhD
11. Glenn R. Furnier	MS
12. Curtis B. Hill	MS

1981 -

1. Mark W. Andrews	MS
2. Mark A. Stennes	MS
3. Laura E. Sweets	PhD
4. Kosim M. Kardin	MS
5. Frederick A. Baker	PhD
6. Robert L. Bowden	MS
7. Edgardo H. Hijano	PhD
8. Keith D. Johnson	MS

1982 -

1. Gary D. Franc	MS
2. Kathryn W. Kromroy	MS
3. Dean E. Herzfeld	MS
4. James M. Mital	MS
5. James A. Kolmer	MS
6. Judy A. Thies	MS
7. Gregory C. Pratt	PhD

1983 -

1. Markus W. Andres	PhD
2. Brian J. Steffenson	MS
3. Kira L. Bowen	MS
4. Janice W. Kaye	MS
5. Roger R. Musick	PhD
6. Mary E. Palm	PhD
7. Laura R. Todd	MS
8. Jesus Fernandez Perez	MS

<u>Name</u>	<u>Degree</u>
9. Therese Atcham	MS
10. Peter J. Bedker	MS
11. Cho-Li Caroline Fei	MS
12. Paul H. Goodwin	MS
13. Jennifer Juzwik	PhD
14. Michael J. Wingfield	PhD

1984 -

1. William O. Macheel	M.Agr.
2. Suleiman M. Al-Kherb	MS
3. Rodney H. Vargo	PhD
4. Indre J. Bildusas	MS
5. Laura M. Schickli	MS
6. Paul J. Zambino	MS
7. Yin-Won Lee	PhD
8. Lu Tze Hong	MS
9. Janese V. Thatcher	MS
10. Monte R. Miles	MS
11. Carl A. Matyac	PhD

1985 -

1. Lewis Otjen	MS
2. Clint L. Kohls	PhD
3. Marguerita L. A. Palmer	PhD
4. Joseph G. O'Brien	PhD
5. William H. Livingston	PhD
6. Robert A. Dietrich	MS
7. Mary E. Sortland	MS
8. Moussa Seck	MS
9. William W. Shane	PhD

1986 -

1. Adalberto M. Barreras	MS
2. Frisby Davis Smith III	MS
3. Therese Atcham	PhD
4. Mohammed Boulif	PhD
5. Kenneth B. Johnson	PhD
6. Nora S. Plesofsky-Vig	PhD
7. David R. Johnson	MS
8. Peter J. Bedker	PhD
9. In-Sung Hoang	PhD
10. David A. Ross McQueen	PhD
11. Brahim Ezzahiri	PhD

1987 -

1. German P. Hoyos	MS
2. Weiping Xie	MS
3. Hamed K. Abbas	PhD
4. Monte R. Miles	PhD
5. David W. Gardner	PhD

Degrees continued

1988 -

<u>Name</u>	<u>Degree</u>
1. El Mostafa Toufiq	MS
2. Melody F. Olson	MS
3. Beatriz A. Perez	MS
4. Scott A. Enebak	MS
5. Jennifer Lorang	MS
6. Mouna Tajani	MS
7. Judy A. Thies	PhD
8. Linda M. Treeful	PhD
9. Flavio A. Lazzari	MS
10. Zahra Ferji	MS
11. Nezha Khaless	MS

1989 -

1. Daniel H. Gillman	MS
2. Mohamed Achouri	PhD
3. Jeanne A. Ciborowski	MS
4. Melvin J. Wiens	M.Agr.
5. Jody L. Fetzer	MS
6. David C. Linde	PhD
7. Robert J. Pawlosky	PhD
8. Jill D. Nauman-Pokorny	MS

#### **A RECORD OF FACULTY, POSTDOCTORATES, GRADUATE STUDENTS, AND TECHNICIANS WORKING IN LAB 209, STAKMAN HALL**

From 1941, when Stakman Hall was built, to 1991, 43 persons representing faculty, graduate students and full-time technicians have worked in Laboratory 209, Stakman Hall. Their names have been listed in a plaque hung on the laboratory wall for future occupants of the laboratory to view. Sixteen of them came here from other countries; some were graduate students and some were postdoctorates. Many students have worked part-time in the lab; however, we have no accurate record of these people. Although we compiled this list from records, it is possible that we may have missed someone. If so, please contact us so that we can update our records. I believe that Earle Hanson and Andy Downie were the first occupants of the lab, in 1941.

Andrew Asare-Nyako, Ghana, MS, 1953; PhD 1965  
 Ernest E. Banttari, USA, PhD 1962  
 Howard L. Bissonnette, USDA and PhD 1963  
 Edward E. Butler, USA, PhD 1954  
 Patricia M. Burnes, USA, 1983-90  
 Jose J. Castano, Colombia, PhD 1967  
 N.K. Chakravarti, India, Post-Doctorate, 1967-68

Annabelle I-Pin Chang, Taiwan, MS 1967; PhD 1970

Young Sup Cho, Korea, PhD 1970  
 Hoo Sup Chung, Korea, PhD 1966  
 Andrew R. Downie, USA, PhD 1942  
 Sayed M. El-Kandelgy, Egypt, MS 1963; PhD 1965  
 Alwyn F. Gibbs, Australia, PhD 1971  
 Craig R. Grau, USA, PhD 1975  
 Earle W. Hanson, USA, PhD 1942; USDA 1941-46  
 Barry B. Hunter, USA, MS 1967  
 Robert J. Klug, USA, PhD 1957  
 Thor Kommedahl, USA, 1943-45, 1962-90  
 David S. Lang, USA, MS 1975  
 S.S. Lee, Korea, Post-Doctorate 1986  
 Larry J. Littlefield, USA, MS 1962; PhD 1964  
 Carl A. Matyac, USA, PhD 1984  
 Robert F. Nyvall, USA, MS 1966; PhD 1969  
 Cynthia M. Ocamb, USA, PhD 1991  
 S.H. Ohh, Korea, PhD 1973  
 Jeri J. Ooka, USA, PhD 1975  
 Louis T. Palmer, USA, PhD 1968  
 M.C. Pandey, India, MS 1966; PhD 1969  
 John B. Rowell, USA, AEC 1949-55  
 K.K. Sabet, Egypt, Post-Doctorate 1986  
 Gusti Sarbini, Indonesia, MS 1976; PhD 1979  
 Charles L. Schneider, USDA and PhD, 1956  
 Bent Skovmand, Denmark, MS 1973  
 S. Subbarayudu, India, Postdoctorate, 1968  
 James B. Threinen, USA, MS 1957  
 A. Tjokrosudarmo, Indonesia, MS 1976  
 Laura R. Todd, USA, PhD 1991  
 Joseph M. Vargas, USA, PhD 1968  
 Herman L. Warren, USA, PhD 1970  
 Roy D. Wilcoxson, USA, UM, 1962-72  
 Wiley B. Hunt, USA, MS 1979  
 Wayne T. Williams, USA, MS 1965  
 Carol E. Windels, USA, MS 1972; PhD 1980; CS 1973-84  
 T. Kommedahl

#### **BOOKS**

A recent publication involving a staff member is: "Microbial and Enzymatic Degradation of Wood and Wood Components" by K.E. Eriksson, R.A. Blanchette, and P. Ander. The publisher is Springer-Verlag. The book describes the biochemistry involved in the biodegradation of cellulose, hemicellulose, and lignin by fungi and bacteria. Some of the main topics are: Biosynthesis and structure of the components of wood; the various fungal and bacterial enzymes and their mode of action that are involved in wood degradation; and the possibilities for biotechnology in this research area. K. Eriksson is at the University of Georgia, Athens, GA, Bob of course is here at St. Paul, MN, and P. Ander is at the Swedish Forest Products Institute, Stockholm, Sweden.

## DEPARTURES

**Dr. Won Jo Cheong** returned August 15, 1990 to Seoul, Korea, where he will work with industry. Dr. Cheong has been a Research Associate in Dr. Mirocha's laboratory since November 1988.

August 28, 1990. There was a farewell tea for two visiting scientists who had been working on mycotoxins in Dr. Mirocha's lab. They were **Ye-Chun Wen**, who arrived in October, 1987 and will be working in the Shanghai Institute of Organic Chemistry, **Shu-Rong Zhang**, who arrived in 1987, went to live in St. Cloud, MN with his student daughter.

**Cindy Ocamb**, who received the PhD in February 1991, accepted a position as Postdoctoral Research Pathologist in the North Central Forest Experiment Station on the St. Paul Campus. Cindy will work with **Jennifer Juzwik**, PhD 1983, on diseases of seedlings in conifer nurseries. Happily Cindy will still be near enough to come to coffee occasionally and attend other events in the Department.

**Cheryl A. Engelkes**, PhD 1991, left in early July and drove to Beltsville, MD in time to assume her duties July 15 as Postdoctoral Research Pathologist, USDA/ARS in Biocontrol of Plant Diseases. We understand that her principal research will be on biological control of Verticillium wilt of potatoes. Old Timer **George Papavizas**, PhD 1957, is the Research Leader of the Biocontrol Laboratory.

There was a farewell tea for **Yong Bae Kim** July 11, 1991. Dr. Kim is Professor in the Department of Food Technology, College of Agriculture, University of Korea. He spent the past year in Dr. Mirocha's lab doing research on mycotoxins and returned to Korea after spending two weeks in Germany where he got his PhD.

**Zhaowei Liu** left the Department July 31, 1991. He was a Research Specialist working in the laboratory of Dr. Elwin Stewart since April, 1990. Zhaowei will be a graduate student in the Department of Plant Science at South Dakota State University.

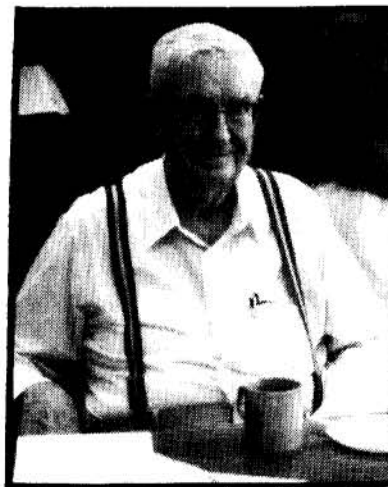
**Deborah Sundquist** accepted a position as Veterinary Technician at the Roseville Animal Hospital, effective May 29, 1991. Deborah, with a BS degree in biology, has worked as Senior Laboratory Technician in Dr. Bantari's lab since July, 1989.

**Marjorie Eerdmans**, who has been Assistant Scientist in Dr. Blanchette's laboratory since August, 1988, accepted a position as Medical Technologist in Norway, MI. Marjorie, who studied Medical Technology at Hamline University and the U of M, worked with the enzymes of wood decay fungi in Blanchette's program.

**German Hoyos**, PhD December 1990, left the department in late June to take a Postdoctoral Research Position in the Seed Laboratory at the University of Iowa, Ames, IA. Dr. Hoyos will be working on *Aspergillus flavus* with Old Timer **Dennis McGee**, PhD 1967.

**Laura Todd**, PhD August 1991, has accepted a Postdoctoral Position in the Agronomy Department at Purdue. Laura will be working in Plant Genetics with Dr. Sally MacKensie.

**Andre' Abad**, who has been working with Dr. Blanchette for about 5 years, is leaving for Purdue University where he will continue his Electron Microscopy researches.



### Happy Birthday Dr. Eide

On August 15, 1991 we celebrated Carl's 87th birthday anniversary (August 20) with coffee and cake at the 10 AM coffee break. Phil Larsen had to be away so Dick Zeyen extended the departments congratulations and best wishes. The refreshments were delicious and we all had a delightful time celebrating Dr. Eide's birthday.



## PROFESSIONAL ACTIVITIES

### North American Cereal Rust Workshop Hosted by the Cereal Rust Lab

The biennial North American Cereal Rust Workshop met on the St. Paul Campus, February 12-14. Sixty people attended the workshop, half from the Cereal Rust Lab or the University of Minnesota, 10 from Canada, one from Mexico and 9 from other states. Discussions covered topics from epidemiology and breeding resistant cereal cultivars to molecular genetic analyses of the mechanisms of virulence and resistance.

Discussions began with the 1990 surveys of wheat stem rust, leaf rust, and stripe rust, oat stem rust and crown rust, and barley stem and leaf rust. The discussions continued on availability and effectiveness of specific genes for resistance in the cereal cultivars to these rusts.

The epidemiology of cereal rusts was discussed, but most of the time was devoted to barley stem rust and barley stripe rust. A race of wheat stem rust that is virulent to all current barley cultivars appeared in the Great Plains and Canadian Prairie Provinces in 1989. It survived the winter on susceptible winter wheat cultivars in Kansas, and reappeared in fields of spring barley in 1990. Much of the discussion centered around efforts to find resistance to this race in the thousands of barley lines in the Small Grain Germplasm Collection, and in breeding programs. Field tests in Puerto Rico identified some promising lines, but many of these were susceptible in greenhouse tests at the Cereal Rust Lab. A committee was appointed to set up additional field tests for resistance to stem rust in Canada and at Rosemount, MN and for resistance to barley stripe rust in Mexico in 1991.

Barley stripe rust has not yet occurred in the U.S.A. or Canada, but caused severe damage to barley in Mexico in the past few years. Barley stripe rust came to Mexico from South America a few years ago. It was inadvertently introduced into South America from Europe around 1975. Stripe rust caused devastating losses to the barley in South America until resistant cultivars were developed. None of the North American barley cultivars are resistant.

On Wednesday afternoon, participants discussed the introduction of early responses in infected host cells that determine whether the reaction will be resistant or susceptible. The primary

elicitors from rust and powdery mildew fungi that induce hypersensitive resistance have proven very elusive. They may be produced only in haustoria. Methods to induce germinating rust spores to produce haustoria were described.

Methods of characterizing the genomes of fungi were outlined. Electrophoretic karyotypes of smut fungi indicate that they may have variable numbers and sizes of chromosomes, the pulsed field technique has not yet been successfully applied to separate and characterize chromosomes of rust fungi. Reconstructions from transmission electron microscopy of serial sections through early pachytene nuclei showed that the wheat stem rust fungus, *Puccinia graminis* f. sp. *tritici* has 18 chromosomes and the oat crown rust fungus, *P. coronata* has 17. No polymorphism in chromosome number was detected among six isolates of *P. graminis* f. sp. *tritici*. Photometric analysis of fluorescence from dyes bound to DNA is also being used to compare the relative sizes of genomes of various rust fungi.

Restriction fragment length polymorphisms (RFLPs) were discussed in relation to developing linkage maps, and locating resistance genes. Polymerase chain reaction (PCR) to multiply specific DNA segments for nucleic acid sequencing analysis was proposed to study phylogenetic relationships among various rust fungi.

Transformation vectors are being constructed using promoters obtained from *Puccinia graminis* genes. The existence of an avirulent isolate of stem rust that can be cultured on artificial media facilitates perfecting a transformation vector. Virulent isolates need to be transformed in host tissue in order to isolate and identify the genes that determine the virulence or avirulence of specific rust isolates.

Alan P. Roelfs

### Women in Agricultural Science

Female post-docs, graduate students, research staff, and faculty in Plant Pathology, Soil Science, and Agronomy met regularly over the past year to discuss professional issues relating to women in science. Topics included communication styles of men and women, status of civil service scientists, integrating family and professional demands, and dealing with the demands of two careers in one family (particularly at the graduate student-post-doc stage). Discussions focused on outside readings, invited speakers, or on exchanging information within the group. Guest speakers who joined our

discussions, the group has compiled a small library of books and journal and newspaper articles that cover a wide range of information relating to women in science (e.g. history, career strategies, publication rates, etc.). The grant proposal our group submitted to the UM Commission on Women ("Career Strategies of UM Female Scientists") was not funded, but it provided us with the opportunity to discuss in detail the sorts of information that we would like to have in developing our own career strategies. After a brief summer hiatus, we look forward to regrouping this fall for further information-gathering and exchange!

*Linda L. Kinkel*

#### **Pesticide Applicator Training Program**

The Minnesota Pesticide Applicator Program, which resides in the Department of Plant Pathology, is a participant in a farm family cancer reduction demonstration project. The three year \$1.6 million project is funded by the Centers for Disease Control and the National Institute of Occupational Health. Three cancers with higher concerns for farm families will be addressed: breast cancer where barriers to health care is of concern; skin cancer as farm family members typically have high sun exposure (a direct cause of skin cancers); and selected other cancers that have been tenuously associated with exposure to agricultural chemicals. Intervention in treatment counties will include extensive educational and health care delivery through joint efforts of local health care providers and agricultural professionals; farm, youth, and women organizations; various divisions of the U of M School of Public Health; American Cancer Society; and Minnesota Extension Service's Agricultural, Home Economics and Youth/4-H programs. Dean Herzfeld is a project co-investigator, Dr. Richard Meronuck is an advisor to the project, and Dr. Jack Mandel, Environmental and Occupational Health, School of Public Health, U of M is principal investigator.

*Dean Herzfeld*

#### **PLANT DISEASE CLINIC**

##### **Top Ranked Plant Disease Diagnostic Clinic in the North Central Region**

In a 1991 survey of plant disease clinics in the North Central Region, the University of Minnesota's Plant Disease Clinic was rated the top clinic in diversity of services offered, number of samples processed and income generated from user fees. The survey also revealed that our clinic received the lowest amount of University funding. This poses a serious problem to the continued operation of the Plant Disease Clinic since annual income fluctuates from year to year and is dependent on weather conditions which affect disease development and demand for clinic services. Because of this inherent variability, establishment of permanent funding for the clinic director's position is mandatory. To bring the level of financial support closer in alignment with other clinic programs nationally and regionally, additional permanent funding should be provided to cover a portion of salary costs of the secretary and lab technicians. Establishment of a permanent funding base for the Plant Disease Clinic is a primary goal for 1991.

In 1990, the Plant Disease Clinic processed 4,000 plant samples and 1,250 phone calls for a total of 5,250 contacts, representing a 50% increase over 1989. Since the expansion of services in 1986, the total number of clinic contacts has increased by an average of 25% annually. Full-time staff members include Jill Pokorny, Director and Sandee Gould, Junior Scientist. During the growing season a Secretary and 1-4 students are employed on a part-time basis.

The Plant Disease Clinic responds to the changing needs of Minnesota commercial growers, and diagnostic services are tailored accordingly. As an example of the Plant Disease Clinic's ability to respond effectively to current agricultural disease problems, the staff worked cooperatively with Dr. David MacDonald to implement soybean cyst nematode testing. In 1990, a total of 2,151 soil samples were processed for the presence of the soybean cyst nematode (SCN). Through laboratory testing at the Plant Disease Clinic and scouting efforts of the Minnesota Pest Survey Program, 6 new counties (Le Sueur, Murray, Nobles, Redwood, Renville and Sherburne) were found to have SCN present.

The Plant Disease Clinic is a valuable research facility for University staff, extension specialists and

private industry. Since 1986, the Plant Disease Clinic has completed 48 contract research projects which have included fungicide efficacy and pathogenicity testing, pathogen isolation and identification studies, and testing of new diagnostic techniques. In addition to its service and research components, the Plant Disease Clinic plays an important role in education and training. In 1990, the Clinic staff produced symptomatic plant materials, educational materials and teaching support for 2 indepth training workshops conducted for county agents, MN pest survey personnel and IPM scouts. The Plant Disease Clinic employs students and provides "hands on" diagnostic training which qualifies them for participation in the Professional Experience Program (PEP). *Jill D. Pokorny*

#### Dial-U Program

The Minnesota Extension Service, DIAL U CLINIC, is a sister clinic to the Plant Disease Clinic and handles non-commercial specimens. Extension specialists in plant pathology, horticulture, entomology and six technicians respond to calls, mail and walk-in clients. Most of the calls to the Clinic come by way of 976 phone lines, resulting in an automatic billing of \$2.50 to the calling phone.

Plant and insect problem solving along with horticultural information kept the staff busy during 1990 with more than 24,600 contacts for information. Spring and early summer diseases such as anthracnose, grey mold and apple scab flourished with bountiful rain. Of course, patch disease, tomato blight and aster yellows put on a good show later in the season.

On the unusual side: One caller inquired as to how to treat carpet for athletes foot fungus. Another caller asked us to say a prayer for Elmer Willie. It seems he had a mushroom growing out of his eye. Fortunately, Elmer was a bunny rabbit carved out of a tree which had died earlier from Dutch elm disease. Humming birds seem to be popular with homeowners. One caller wanted to know if there was a feeding solution she could use in her feeder that would not rot the teeth of the humming birds!

*Cynthia L. Ash*

#### Autoradiography Workshop Held

A workshop on Autoradiography for light and electron microscopists was held on the St. Paul Campus April 15 and 16, 1991. It was organized by Gib Ahlstrand, President of the Minnesota Electron Microscopy Society for 1990-91. Other members of the Department of Plant Pathology who attended included Andre' Abad (co-planner), John Haight, Tim Clark, Eric Boehm, Tamar Eilam and Rod Kuehn. Campus facilities in Borlaug Hall, the Minnesota Agricultural Experiment Station's Electron Optics Laboratory in Christensen Laboratory, and in the Earle Brown Center were used for the Workshop. The section on Radionuclide Uptake and EM Level Autoradiography was led by Dr. Colin Budd, Medical College of Ohio, Department of Physiology and Biophysics in Toledo. The section on DNA/RNA *in-situ* Hybridization and Light Level Autoradiography was led by Dr. Alan Smith, Department of Horticultural Science, University of Minnesota. The workshop consisted of lectures, lab practical exercises and Vendor Fair of equipment used in autoradiography. *Gilbert G. Ahlstrand*

#### USDA-ARS Forage Legume Workshop, St. Paul, MN

A national United States Department of Agriculture - Agricultural Research Service (USDA-ARS) Forage Legume Workshop was held in St. Paul, MN on February 12-13, 1991 to develop a "Plan of ARS Forage Legume Research for the 1990's". The meeting was hosted by members of the ARS Plant Science Research Unit in the Department of Agronomy at the University of Minnesota. Dr. James H. Elgin, Jr., National Program Leader, Forage and Pasture, organized and lead the workshop, which was attended by thirty-four ARS scientists representing breeding, physiology, plant pathology, entomology and forage utilization and management. Overviews of present forage legume research efforts were presented by discipline. The workshop was then organized into discussion groups of scientists, initially within disciplines, and then across disciplines. The charge was to identify needs and priorities for ARS during the next decade. Three major research goals were identified by workshop participants: 1) Improve persistence of pasture legumes, 2) Increase forage quality and productivity, and 3) Develop alternative products and uses for forage legumes.

*Judy A. Thies*

### Wisconsin Students Visit CRL

Professor Al Ellingboe, PhD 1957, and 8 students enrolled in his University of Wisconsin summer "field pathology" class visited the Department and the Cereal Rust Laboratory on July 12th. Al is continuing a practice that was started by another Old Timer Dean Arny, BS 1939, several years ago that attempts to show U of W students aspects of plant pathology that aren't available in Wisconsin. The students spent the first part of the morning at the Cereal Rust Lab in sessions coordinated by Kurt Leonard. They finished the morning learning about Chet Mirocha's work, had a box lunch with Phil Larsen and a few U of M students in the seminar room and then went to the buckthorn plots. The rest of the afternoon was spent with the students in our summer class (PIP a 5650) at Rosemount learning about Neil Anderson's Hypoxylon canker research and taking a wagon tour of the plant pathology "farm" with Roy Wilcoxson as commentator.

David H. MacDonald

### North Central Forest Experiment Station Increases Emphasis on Butternut Canker Research

As a part of their somaclonal variation research on forest tree diseases, the North Central Forest Experiment Station has increased its emphasis on producing butternut trees with resistance to the butternut canker fungus *Sirococcus clavigigenti-juglandarcanum*. This fungus is killing butternut throughout its range and at the present time it is difficult to find healthy trees. Butternut is now a candidate tree for the threatened and endangered species list.

In addition to using tissue culture to produce somatic variants with resistance to butternut canker. The project is also working with the Departments of Natural Resources in Minnesota, Wisconsin, and Iowa to find individual trees that show resistance to this disease. So far 20 trees with putative resistance have been located in Wisconsin and Minnesota. Scion material from these trees is being used to establish a clonal orchard at the Rosemount Experiment Station. This material will be further screened for resistance. The best clones will be propagated for additional field testing.

Darroll D. Skilling

### FACULTY ACTIVITIES

According to Minnesota Science, Spring, 1991, Dr. Elmer Schmidt, PhD 1978, is growing the oyster mushroom, *Pleurotus ostreatus*, on old newspapers. Elmer, Associate Professor in the Department of Forest Products, College of Natural Resources, got good crops of the fungus outdoors on compressed bales of newsprint and woodchips. After several crops are produced the newsprint is reduced to a condition making it suitable for compost, thus helping to solve the waste paper disposal problem.

Several years ago Professor Neil Anderson pioneered the culture of *P. ostreatus* using aspen sawdust as a medium. He helped a young man at St. Joseph, MN get started on commercial production of the fungus. This man is still producing the mushrooms commercially but now uses oat straw as a culture medium. They can be found in the higher-class food stores.

### Safety Seminars

December 4, 1990. James L. Lauer, Biosafety Officer, U of M. Functions and Responsibilities of the Environmental Health and Safety Department Within the University. Sponsored by the Physical Resources Committee, Department of Plant Pathology.

February 26, 1991. Fay Thompson, Acting Director of Environmental Health and Safety, U of M. University of Minnesota Chemical Hygiene Plan. Sponsored by the Physical Resources Committee, Department of Plant Pathology.

April 16, 1991. Dr. Russell Johnson, Department of Microbiology, U of M. Lyme Disease: What's New? Background Information as well as Recent Advances. Sponsored by Department of Plant Pathology and the North Central Forest Experiment Station.

### ABSTRACTS FOR ANNUAL MEETINGS

The department was busy last spring preparing abstracts for the Annual Meetings this past summer. At the latest count, Meg typed 23 for the American Phytopathological Society, 2 for Mycological Society of America, 2 for Society of Nematology, 2 for Agronomy Society, 2 for International Symposium on the Biology of Actinomycetes, and 1 each for the XII International Plant Protection Congress and the 10th World Congress on Animal, Plant and Microbiol Toxins. That totals up to 33 and there are some gems in this years papers.