



Wherein are recorded the recollections, the ruminations and the raspitations of those who have drunk from the foaming fount of the Department of Plant Pathology of the University of Minnesota and who now spout forth in divers ways

Let the fount foam and never run dry  
 Let the spout squirt and never lose power



1. Plant Pathology
2. Plant Science
3. Crops Research and Field Service
4. Location of new greenhouse
5. Soils Science
6. Horticulture Science
7. Entomology, Fisheries and Wildlife
8. North Central Forest Experiment Station
9. Forest Products Research

## OLD TIMERS

M. W. Cormack (PhD '36) retired from the Canada Department of Agriculture Research Station, Lethbridge, Alberta, August 15, 1967. He was appointed Director, Plant Breeding Station, Njoro, Kenya, in January 1970. The project is operated jointly by the Government of Kenya, Canadian International Development Agency and the University of Manitoba.

Louis Palmer (PhD '68) spent a year with CIMMYT and in November, 1969, joined the cooperative wheat program of the Rockefeller Foundation and the Government of India.

Robert Nyvall (MS '66, PhD '69) working with (O.T.) Bill Haglund (MS '58, PhD '60) on pea root rots at Mount Vernon, Washington, was featured in Profiles, a column on personalities in the Skagit Valley Herald, Mount Vernon, Washington. According to the article, Bob is doing an excellent job, but we hear this from even more reliable sources.

Jose Vallega retired from FAO, Rome, Italy, and joined the Embassy of the Argentina Government in Rome as Agricultural Counsellor. This announcement also included praises and commendations on Vallega's contributions to the Near East Wheat and Barley Improvement and Production Project. For example, "It is due to his personal efforts and interest that the Project has made good progress." Best of luck in your new career, Senor Vallega.

H. H. Flor (MS '24, PhD '29) retired in November 1969, from his position with the USDA, North Dakota State University, Fargo, N. D. Harold worked on flax rust in North Dakota

since 1931. During his career he developed many rust resistant varieties of flax, but made his mark in plant pathology in his studies on genetics of pathogenicity and genetics of host parasite relations. This brought him honors including the University of Minnesota Outstanding Achievement Award, The Elvin Charles Stakman Award, Fellow of the American Phytopathological Society, the first Ruth Allen Award of the American Phytopathological Society and others. It is reported that although Harold retired last fall he continues to work in his laboratory as he always has since 1931.

The following is a report of an event honoring Harold, February 9-10, 1970:

On February 9-10, I was at North Dakota State University participating in a seminar, a banquet, and a Sigma XI lecture honoring Dr. Harold H. Flor. In the afternoon, Dr. Clayton Person presented a seminar on his research on the smut fungi, primarily Ustilago hordei. In the evening there was a banquet at which Dr. Flor was presented with several gifts, letters, telegrams, and a book of letters from his friends and colleagues. Following the banquet, Dr. Person presented a Sigma XI lecture on the genetics of parasitism in which he developed the history of this subject and finally terminated it with the gene for gene concept that Flor developed. In his lecture he pointed out that Flor was the first person to actually work with the genetics of the host and the genetics of the pathogen in relation to each other and by so doing identified individual genes in the host and pathogen. Since this concept was published approximately fifteen years

ago, the hypothesis has been applied to twenty or more pathogens and the model fits in each case. This is particularly true where genes for pathogenicity and genes for resistance have been identified.

Personally I am very happy that I went because Dr. and Mrs. Flor were most appreciative that someone from the Department of Plant Pathology of Minnesota attended this affair and it was a pleasure for me to help honor Dr. Flor for his contributions to plant pathology.

MFK

Margaret Newton (PhD '22) formerly of CDA, Winnipeg, and now resident in Victoria, B. C., had the Honorary Doctor of Law degree conferred upon her by the University of Saskatchewan, at Saskatoon, for her outstanding contributions toward the control of wheat rust.

W. E. Sackston (PhD '49) resigned the chairmanship of the Department of Plant Pathology at MacDonald College. He plans to devote more time to his graduate students and hopefully, to writing up some of the accumulated back-log of research papers.

Norman E. Borlaug (MS '41, PhD '42) After the last Aurora was published, July, 1970, it was learned that Norm added another honor to his long and growing list. Borlaug, Director of the International Wheat Program of CIMMYT, was conferred the doctorate Honoris Causa on March 19, 1969, by the Agricultural University of Punjab in Ludhiana, India. A group of farmers presented Norm with a plaque with three golden spikes of wheat for his contributions to wheat improvement.

R. C. F. Macer Visiting Scientist, 1962, of Rothwell Plant Breeders Ltd., Rothwell, Caistor, Lincolnshire, England, attended the International Barley Congress in Pulman, Washington,

last summer. On his way he and Mrs. M. stayed four days in St. Paul visiting old friends and making new ones.

J. Lewis Allison (PhD '40) was appointed Superintendent of the Irrigated Agricultural Experimental and Research Center, Prosser, Washington. Lew had spent 17 years with the USDA and 12 years in commercial seed companies prior to this appointment. One tour of duty with the seed interests took him and Mrs. Allison to Saudi Arabia for two years.

Subhi Qasem (PhD '59) is in the Department of Scientific Research, Ministry of Agriculture, Amman, Jordan. Last year he was given an assignment to develop a college of agriculture. This assignment sent him to the United States where he studied the organization of several colleges of agriculture, including Minnesota. Imagine having an opportunity to create a college of agriculture with no preconceived organization or structure. What would you build? We are waiting to see the results, Subhi.

R. C. Cassell (PhD '38) informed us last August that he abandoned administrative work in Broward Junior College and is easing off teaching in preparation for retirement in a year or so. A symptom of the move to retirement is a new address in the true "Venice of America". His address is 1321 Tangelo Isle, Ft. Lauderdale, Fla. 33315.

Bill J. Roberts (PhD '62) parted company with CIMMYT on June 30, 1969, and accepted a position as plant pathologist and wheat breeder with Cargill, Inc. at Fort Collins Colorado.

Mark Smith (MS '66, PhD '68) moved from Buckman Laboratories, Memphis Tennessee, to a position with Crop Quality Council, Minneapolis, Minnesota in November 1969.

R. C. Rose (MS '15) retired, wrote a

long newsy letter to Carl Eide last winter. He reported that they had bought a house in West Palm Beach and expect to have summery weather all year round. His current address is 5100 Spruce Ave., West Palm Beach, Fla. 33407.

Monty D. Harrison (PhD '61) Associate professor, Colorado State University received the Colorado Seed Potato Industry Award for his efforts in solving some potato disease problems.

Hoo Sup Chung (MS '57, PhD '67) was named Head of the Department of Agricultural Biology, Suwon University, Seoul, Korea. He also was elected Vice President of the Korean Society of Plant Protection. Some time ago Chung published the first text book of plant pathology in the Republic of Korea.

Noel T. Flentje University of Adelaide, Adelaide, Australia, was a visiting professor in Phytobrickhaus erectus in the spring quarter, 1969. He returned to Adelaide and he announced that he has been appointed Deputy Vice-Chancellor of the University. He states that Vice-Chancellor is rather akin to the job of President of an American University, and he runs the university. Thus Deputy Vice-Chancellor must be something like a Vice-President in an American University. At any rate it is a high post and we can and will claim our share in preparing him for this professional advancement. Congratulations.

Santiago Fuentes Fuentes (MS '58) joined the technical staff of CIMMYT in March 1970. He will work on the project to get a wider genetic base of resistance to stem rust in wheat.

Lawerence I. Miller (PhD '53) of

Virginia Polytechnic Institute transferred from the Tidewater Station at Holland to the Blacksburg campus.

Harry C. Young (PhD '49) was on sabbatical leave from Oklahoma State University, November 1969-April 1970. He was recipient of a Fulbright-Hays grant and worked with Dr. D'Oliveira in Portugal.

James D. Miller, plant pathologist with the USDA transferred from Mayaguez, Puerto Rico to North Dakota State University, where he will continue stem rust research with the USDA.

Larry J. Littlefield (MS '62, PhD '64), Associate Professor of plant pathology, North Dakota State University, is on leave studying electron microscopy with Dr. Bracker at Purdue University.

W. J. Martin (PhD '42) received the Annual Research Award from the Louisiana State University Chapter of Gamma Sigma Delta for his research on diseases of sweet potatoes.

James M. Wallace (PhD '29) became Professor Emerities, June 30, 1970, University of California, Riverside. Before he retired he had a busy year. He gave the invitational address at the opening session of the 5th conference of the International Organization of Citrus Virologists. At this same conference he was presented a plaque honoring his contributions to citrus virology and in recognition of his founding the IOCV in 1957

Lee H. Person (MS '29, PhD '37) retired from the Crops Research Division, USDA, October 31, 1969. Lee worked in Raleigh, N. C. on diseases of tobacco.

Richard A. Frederiksen (MS '57, PhD '61) assistant professor, Texas A & M University, participated in a Downy Mildew Disease Workshop in Nainital, India in September, 1969.

Robert C. Hildreth (PhD '57) is Assistant Sales Manager of Agricultural and Sanitary Chemicals in the Export Department of Rohm and Haas, Philadelphia, Pa.

Wiley N. Garrett (PhD '62), was appointed Head, Department of Plant Pathology and Plant Genetics, University of Georgia, Athens, Ga. Congratulations, Wiley.

A. I. Zaki (PhD '64), returned from Egypt to the USA and is now a post doctoral fellow, University of California, Riverside.

William M. Bugbee (MS '62 PhD '65), a USDA Plant Pathologist, transferred from cotton disease research in Missouri to sugar beet disease research in North Dakota. He is located in the Department of Plant Pathology, North Dakota State University.

In March, Dr. Helen Hart deserted the so-called salubrious climate of Minnesota to live near her sister in Oregon. Her new address: Rogue Valley Manor (Apt. 313), 1200 Mira Mar Avenue, Medford, Ore. 97501.

#### NECROLOGY

The June, 1970, issue of Phytopathology News reported the death of P. D. Peterson (MS '26, PhD '29) on March 26, 1970. He was an instructor in the Department of Plant Pathology while taking his graduate work and served with the USDA until 1930. After that he worked for Koppers Research Corporation for two years, then was an Assistant Professor at Cornell for one year. He was a research assistant at the Crop Protection Institute for one year. He worked with the Freeport Sulfur Co. and became Director of Agricultural Research. From 1944 to 1948 he was Technical Director of American Fruit Growers, Inc. and from 1948 to his retirement

in 1961 he served as Technical Director of Agricultural Sales in Stauffer Chemical.

#### LOCAL NEWS

One of the major events of the year was the appointment of Dr. Ward S Stienstra to the position of Assistant Professor. He will devote half time to research and half time to extension on disease of ornamental plants. This offers a unique opportunity because there are innumerable requests from the public for help on controlling diseases of ornamentals in this metropolitan area. Over 75% of the cases that come to the Plant Disease Clinic are problems with ornamental plants. Ward was awarded the PhD at Michigan State University in June of this year. He is a native of Michigan and grew up in the Holland, Michigan, area. If background means anything, he should be a natural for this job. He came May 1, acts like a native, and can hold his own with Johnson and Bissonnette.

#### GREENHOUSE

Last year Aurora reported a \$371,000 appropriation for an addition to plant pathology greenhouses and headhouse. Drawing and plans were advertised for bid and the bids were opened July 1, 1970. As was expected the bids are much more than money available. Where do we go from here? More planning, more conferences, more frustrations. Maybe someday a greenhouse will be built.

#### COOPERATIVE RUST LABORATORY

Worse luck for the Cooperative Rust Laboratory facility. That project has had the green and red light in the last four years as often as the green and red lights change on Hennepin and 7th. Currently the green light is on and John Rowell is working with architects and USDA planners. There is still a glimmer of hope that the facility

will be constructed some day.

On June 25, 1970, Don and Marion Stewart started on a trip to Egypt, where Don will work with a team of agricultural scientists to help develop the agriculture in the area of the Asswan dam. The project is supported by FAO and Don is on leave from the USDA for one year.

#### HONORS

J. G. Harrar (PhD '35) was recipient of the Stakman Award in 1969. On November 13 a dinner was held in his honor at the University of Minnesota Alumni Club at the Sheraton-Ritz Hotel in Minneapolis. Dutch is the 13th recipient of the award and all of you readers know it recognizes his contributions to international agriculture and world food supplies. The Award was presented by Malcolm Moos, President of the University of Minnesota.

Several years ago Ralph Lindgren (MS '28, PhD '37), established the Carolind Scholarships as a memorial to his parents. These scholarships provide funds for outstanding students in Forestry and Forest Pathology. In the last academic year six students in Forestry were winners of Carolind Scholarships.

C. M. Christensen and coauthor Henry H. Kaufman were winners of one of the McKnight awards in recognition of their book "Grain Storage: The Role of Fungi in Quality Loss." The Award was established last year by the McKnight foundation to honor authors of books published by the University of Minnesota Press. The two authors shared a cash prize of \$750.

D. W. French and Frank Tainter, one of French's students was awarded a travel grant to study dwarf

mistltoes in Chile and to develop potential research projects in Chile that can be used as part of the education of Chilean graduate students. These grants are made by the University's Office of International Programs. Dave and Frank spent all of January in Chile. We can not imagine why they chose to go to Chile during the coldest month of the year in the Arctic.

Chet Mirocha, Associate professor; and Bill Bushnell, USDA and research plant physiologist, Cooperative Rust Laboratory participated in the second U.S. - Japan Science Seminar on host-parasite physiology in Honolulu, Hawaii, January 10-14, 1970. The seminar was on Morphological and Biochemical Events in Plant-Parasite Reaction. Both men presented papers. In addition Chet was the American Chairman who made the arrangements along with the Japanese Chairman, Dr. Akai.

Professor Roy D. Wilcoxson returned from a Sabbatical leave in India on January 3, 1970. While there he worked with OT's Renfro, Saari, Pandey, Joshi and others on cereal rusts.

Thomas King was called on by the Ford Foundation to review their plant pathology program in India. Thus, he spent January and February there. He also worked with OT's Saari, Renfro, Pandy, Joshi and Louis Palmer.

MFK attended a special session at the American Society for Microbiology in Boston, Mass, April 27-30, 1970. The session was called to organize a Federation of U.S. Culture Collections to establish lines of communication between curators and directors of culture collections, to encourage research in taxonomy, to facilitate culture exchange, and to foster expansion of existing collections. We should hear more from the officers when operating

procedures are developed and it is hoped that this organization will be helpful to plant pathologists, mycologists and other microbiologists.

Thor Kommedahl became President-Elect of the American Phytopathological Society at the meetings of the Society in Spokane, Washington, August, 1969.

E. C. Stakman-Former kittenball coach and Department Head ECS commuted fairly regularly during the past year between St. Paul and New York City. On September 25-27, 1969, however, he visited the Plant Pathology Club of Michigan State University and gave a talk at the dedication of the Plant Biology Building. While there, ECS saw OT's Don deZeeuw, Axel Anderson, Al Ellingboe, Harry Murakishi, and Charles Olien. From October 27 to November 1, the peripatetic professor spent at Nebraska Wesleyan University, where he gave public lectures and seminars and engaged in group discussions in connection with NWU's "Science Year." At the University of Nebraska he visited with OT's Mike Boosalis and Mike Daly.

Since the last extended stay in New York, March 20 to July 2, ECS has enjoyed being home, where he can watch the green grass grow and listen to the birdies sing instead of taxi tires on asphalt.

#### President Malcolm Moos visits wheat and oat nurseries

Last summer the cooperative wheat improvement project involving USDA, the Department of Agronomy and Plant Genetics and the Department of Plant Pathology had one of the largest wheat nurseries known to this historian. It comprised approximately 30,000 plots of many of Dr. Heiners genetic

studies and breeding materials and the rust nursery. At any rate all of this material was inoculated with Puccinia graminis tritici by Don McVey of the Cooperative Rust Laboratory.

As many of you know, various individuals in Central Administration on the Minneapolis Campus look with avid and greedy eyes on this expanse of open field here on the St. Paul Campus. They want the land for university buildings, student housing, parking lots, and various other uses. One cannot criticize them for their thinking when one experiences the extremely crowded conditions on the Minneapolis Campus with its 40,000 + students.

We on this campus continually take advantage of every opportunity to impress our administrators with the importance and value of our outdoor research laboratories, and 30,000 plots of wheat plus 5000 plots of oats planted among buckthorns seemed to be an opportunity we could not afford to pass up. Through the office of the Director of the Experiment Station, my colleague Herb Johnson, Head of Agronomy and Plant Genetics and I, invited President Moos and as many of his vice-presidents as he wanted to bring to visit the plots on July 22, 1969.

The day came and President Moos with Vice-President Donald K. Smith, and Assistant Vice President Stanley B. Kegler and Fred E. Lukerman came to see what was going on. They were accompanied by Dean Berg and Director Hueg.

Matt Moore expounded on crown rust of oats, the value of the buckthorn nursery, and the virtue of the isolation we enjoy with the expansion of the Twin City metropolitan



area. There are no oats or wheat within at least a 15 mile radius and mostly you must go 25 to 30 miles to find a field of grain. Bob Heiner, USDA wheat breeder (successor to Ausemus) told our guests all about the wheat breeding project, its contributions to wheat germ plasm throughout the world, its value to the development of rust resistant wheats, and relationships to other wheat projects in the USA, Canada, Mexico, and international rust nurseries. I presented the question we are asked over and over again, "What is the value of this land?" Mr. Moos answered himself by pointing out that with this kind of experimentation it is impossible to put a dollar value on this land. We all felt that our administrators were impressed and we believe our efforts helped delay a little longer the day of reckoning when we will have to give up these fields.

MFK

#### St. Paul Campus Planning

The enrollment in the University of Minnesota reached 50,000 last fall quarter, with about 40,000 on the East and West Bank Campuses in Minneapolis and only about 3500 on the St. Paul Campus. The obvious solution to expanding enrollment in the Twin Cities Campus is to expand the St. Paul Campus. Planning is in progress to have approximately 15,000 students on our Campus by 1980. To bring about these changes the central administration is studying every aspect of the St. Paul Campus, particularly space. More students require more buildings, and all of our open land is as tempting to the planners as candy is to a baby.

Second question: What units of

the University, if any, will be moved from Minneapolis to St. Paul? The Department of Botany definitely will come here as soon as the new building for the College of Biological Sciences is completed. Construction has began and completion is anticipated within two years. It is a 9 story building, 140 x 140 sq. ft. located where the inter-campus street car used to turn about (real OT's remember well). Other units such as Business Administration, parts of General College, Social Studies, and others are under consideration, but it is too early to predict what will be moved.

Old Timers, especially those who were undergraduate here, will be interested in internal changes in the Institute of Agriculture. Effective July 1, 1970, the College of Agriculture Forestry and Home Economics was divided into three faculties, each with an acting Dean. H. J. (Tod) Sloan is Acting Dean of the College of Agriculture, Frank Kaufert is Acting Dean of the School Forestry, and Keith McFarland is Acting Dean of the School of Home Economics. It is planned that during the next academic year the latter two will be designated colleges and each college will get a permanent Dean.

#### GRADUATE STUDENTS

Donald Maloney, M.S. June 1969, took the final M.S. examination and preliminary for the Ph.D. simultaneously. He returned to his home in Ireland and is continuing Ph.D. thesis research in his home country.

James V. Groth, M.S. June 1969, was drafted into the Army. He expects to continue work toward the Ph.D. somewhere after military service.

Timothy P. Sullivan, M.S. August, 1969 in Plant Physiology is continuing graduate studies toward the Ph.D. in Plant Physiology in the Department of Agronomy and Plant Genetics, University of Minnesota.

John A. Menge, M.S. June, 1969, was drafted into military service. He expects to return for the Ph.D.

Roderick R. Bevis, M.S. June 1970, is employed by the Cooperative Rust Laboratory, USDA, St. Paul Campus, University of Minnesota.

David P. Swensrud, M.S. June 1970, will probably teach biology in public schools.

Robert Nyvall, Ph.D., July 1969, is on the staff of Washington State University, and stationed at the Northwestern Research and Extension Unit, Route 1, Mt. Vernon, Washington. He is working on pea root rot with "OT" Bill Haglund.

H. Edwin Carley, Ph.D., December 1969, is employed by Rohm and Haas Research Laboratories, Spring House, Pennsylvania.

Thomas Kucharek, Ph.D., December 1969, is an Assistant Professor and Extension Plant Pathologist, University of Florida, Gainesville, Florida.

Sinn S. Wang, Ph.D., December 1969, is employed by the Department of Agronomy and Plant Genetics, University of Minnesota.

Phillip J. Salisbury, Ph.D., June 1970, has been and continues to be on the faculty of the University of British Columbia, Vancouver.

Yong Sup Cho, Ph.D., June 1970, returned to Seoul, Korea, where he is on the faculty of Suwon National University.

Jon M. Prescott, Ph.D., June 1970, is on the wheat project with the Rockefeller Foundation-India Cooperative program in New Delhi, India.

Herman L. Warren, Ph.D., June 1970,

is currently leader of the Plant Disease Clinic, University of Minnesota, but he will go to Beltsville, Md. very soon where he will work with "OT" George Papavizas.

Annabelle I-Pin Chang, (now Mrs. Tom Mew) Ph.D., June 1970, married one of our graduate students, Tom Mew, from Malaysia on June 15. She is currently employed part time in Food Science and Industry, University of Minnesota.

Alan P. Roelfs, Ph.D., June 1970, has been working in the Cooperative Rust Laboratory while studying for the Ph.D. He continues to work there and will take over part of the duties of Don Stewart, while the latter is on leave.

Thursday Night at 8

Were wisdom as common as knowledge, there would be no need for Seminar. Scientific wisdom needs to be fostered and Seminar hopefully provides the arena for wisdom and knowledge. But the lore of plant pathology can be elusive, which is painfully plain in many an oral examination. Why should not seminar be the place to gain wisdom from the jargon and windy fogger of specialties? OR is this possible? A heated dispute over seminar led to a poll taken of staff and student members concerning program. The students voted for speakers and the staff for literature reviews, with some exceptions on both sides. Last year speakers predominated but this year about 40% of the speakers reviewed literature, a partial victory for staff and hopefully also for students.

Under the leadership of Seminar Chairman Dick Meronuck, a diverse array of speeches was heard. A startling talk on communications by Ron Brown one week was followed

by fisherman John Rowell on systemic fungicides for rusts and by Don Stewart, another veteran of the rust wars and its racial conflicts. Hail to Robigalia.

In one evening we heard from the antipodes: Dr. McEwan from New Zealand and Bob Rees from Australia (down under) and then from Dr. Wilmar from England (presumably over up). These were not the only international nights, as our own Roy Wilcoxson told of his rust work in India and the prowess of Old Timers Renfro, Palmer, and Pandey, Saari, Holton, and others. In nearly all parts of the globe, there appears on the scene that ageless Fighter of Shifty Enemies (fungi), ECS, who stands with cudgel in hand to give aid and encouragement to all fighters of phytopathogenic fungi. Some of his exploits reach us even in distant America. He, too, addressed seminar with his contagious enthusiasm for science in general.

Not all seminars take on rust; after all we have not met an epidemic in Minnesota since 1955, and nothing was as bad as the great rust epidemic of 1904 when Eide was born, so discussion meandered from shifty enemies to such topics as bryozoans of the upper midwest by Dale Chelberg of the Science Museum and bacterial photosynthesis by Albert Frenkel, of the Botany Department. Mirocha and Christensen will not let us forget mycotoxins and moldy corn, grain, pepper and macaroni, and they bring in reinforcements from veterinary medicine and make us look at swollen vaginas and gory internal organs of mice, pigs, and poult sick from mycotoxins--all in living color.

Both the science and the profession of plant pathology get attention. Harvard-educated, Lucas Calpouzou

keeps us up-to-date on the fortunes of IBP and the adventures of plant pathologists in that undertaking. Mark Smith of the Crop Quality Council, following the footsteps of the ebullient Gene Hayden, now Mr. Breakfast in Chicago, came back to tell us of CQC and rusts as well as to check up on the athletic prowess of present generations of graduate students. Kerny relates the trials of a treasurer of APS and how much it costs to publish an issue of PHYTOPATHOLOGY (\$10,000 for printing alone). Hank Purdy of Florida, who will succeed Kerny, as treasurer, came to learn and also to sell Florida--he nearly succeeded as we all checked the next plane departure. The oranges of Florida were not pictured as huge as Ernie DuCharme boasted of, nor as large as those reputed to be collected by Stak in Mexico.

Santiago Fuentes of Mexico, J. C. Walker from Wisconsin, John Cross from the Upjohn Corporation, Dr. Rajendren of India and others pictured in different ways the different facets of plant pathology. The relation of cell walls to pathogenesis was expertly treated by Peter Albersheim of Colorado.

Old Timer Erwin LeClerg returned as a plant disease loss expert and to revisit the Tottering Tower where he fought root rots of sugar beets as well as to renew friendships with the ecotypes of Phytobrickhaus erectus, in Seminar.

Extension plant pathology, represented especially by the voluble, fungicide-spraying pilot Howard Bissonnette of French-Canadian ancestry, dominated a few seminar evenings. Strawberry Champion-grower Herb Johnson reports while Howard is lighting his pipe. Howard has not mastered Stak's trick of lighting his pipe only at commas and semicolons of his remarks to thereby ward off interruptions to his thought.

Suffering Old Timers endured smoke-filled, hot rooms of Phytobrickhaus tremuloides tolerably well but the present generation is not so hardy. Recently when temperatures reached the nineties and the relative humidity the same, seminarians retreated to an air-conditioned lab to continue their ruminations and respirations.

Travelogues get scant attention these days, perhaps because of "Rev." Eide's famous text: "Slides are the last resort of the intellectually destitute". However, one show was welcomed, namely that of forest pathologist Frank Tainter, who illustrated his and Dave French's ramblings through Chile in their quest for dwarf mistletoes.

About 20 students reviewed papers or theses the past year—may their number increase. In times of change, the tradition of seminar may change. It will succeed only to the extent that men believe in it. Its value is often known only in retrospect, so foresight is important. Let the cowbell signal the start of seminar, and the refrain "where were you born"? end it each Thursday at eight.

#### Tuesday Seminar at 4 PM

The Armed Forces have lured away so many students, we have had difficulty in finding enough to plan a program for the year without some extra speakers or asking double duty of some. In the fall quarter, we looked at curled, encysted, and sigmoid-shaped nemas as we listened to talks on, and watched worms of *Tylenchorynchus*, *Trichodorus*, *Xiphinema*, *Pratylenchus*, *Radopholus*, *Heterodera*, *Meloidogyne*, *Ditylenchus*, *Aphelenchoides* and *Anguina*. Nematologist and ex-Cornellian Dave MacDonald initiated the quarter's discussion in emphasizing current

trends in research. Towards the end of the quarter, Dr. Chen of Rutgers University unveiled the ultrastructure of nematodes to reveal the inner workings of these creatures. Topics above were prepared by Alabanza, Bevis, Crow, Dueck, Meronuck, Phiri, Slattery, Swendsrud, Warner and Zeyen.

The winter and spring quarters represented a potpourri of plant pathology. Giant cell formation (Jagarlamudi), galls and lesions induced by nemas (Anderson), crown gall morphology and physiology (Ohh), nonparasitic overgrowths (Chang), wilts (Mont), witches brooms (Byrne), exudation (Kroll), wetwood (Tainter), dry and soft rots (Ooka), salt damage to plants (Schwandt), photochemical pollutants (Gibbs) and sulfur dioxide and fluoride damage to plants (Steele) represented student contributions to seminar.

Needle diseases of conifers was illustrated by Dr. Skilling, and canker diseases of trees was discussed by Dr. Schipper, both of the North Central Forest Experiment Station and members also of our staff. Dr. Bushnell (USDA pathologist) of our staff pictured the intricate behavior of the powdery mildew of wheat.

From elsewhere came Dr. Aristotle Pappelis of the University of Southern Illinois and Dr. Ellis Darley from the University of California at Riverside. Dr. Pappelis related cell death of pith tissues of corn to stalk rot and raised serious questions of whether stalk rot fungi are really pathogens. Old Timer Ellis Darley, one time Firestone rubber tree Fellow, led the last seminar of the quarter with a rousing discussion of air pollutants. If we had any previous reservations of the importance of air pollutants to plants, they were quickly dispelled by Ellis as he authoritatively posed the main problems and answers concerning tainted air. We had heard that southern Californians, when they come to

Minnesota, get mighty suspicious of air they can't see. But on some days, even Minnesota air is visible. What the poet described as "a hazy morn of an enchanted day in May" turns out to be .05 ppm PAN, 20 ppm fluorides, .05 ppm ozone, and .5 ppm SO<sub>2</sub>.

The department has so far resisted attempts to split up the one afternoon seminar into several special seminars under the control of one or a few staff members. Proponents of both points of view have been heard but the present arrangement has been deemed best.