



# Aurora Sporealis

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

OLD TIMERS IN MICHIGAN "SPOUT FORTH IN DIVERS WAYS" HEREIN.

Copy submitted by Dr. John R. Vaughn

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*Aurora Sporealis* var. *Michiganensis* f. nov.

With considerable pleasure and due humility, we, in the great state of Michigan, present our edition of this great publication. In the interests of education and enlightenment, a few facts about our dwelling-place should be presented. Michigan is seventh in population in the United States; you drive 646 miles by the most direct route to get from the southeast to the northwest corners of the state; the climate is most salubrious -- it never gets colder than 49 below or hotter than 110 above, and the relative humidity has not yet exceeded 100%. Any crop which can be grown in the temperate zone can be grown in some part of Michigan. Michigan leads the country in the production of sour cherries and dry beans, and is high on the list in potatoes, peaches, apples, grapes, and dairy products. Industrially, Michigan is second to none, containing within its borders the nation's largest industry -- at least about 90% of the motor transport is produced here. From the standpoint of education and research, we have numerous small private colleges, several state-supported teachers' colleges, a school of mines and a fairly large institution of some kind at Ann Arbor in addition to Michigan State College. At M.S.C. we now have 16,000 students, 22 million dollars worth of new buildings since the war, including the new Natural Science building, one wing of which is occupied by the Department of Botany and Plant Pathology. We hope to see many of you next summer when the meetings of the North Central division of the Phytopath Society are held here.

#### Personal and Personnel

There are so many ex-Minnesotans here at present that we have formed a regular Minnesota Club. We have picnics and get-togethers every so often to talk about old times and old friends. The Andersons, Axel, Maude, and Nancy (age 3); the Andrews, Ed, Marian, Claire (age 6), Bruce (age 5), and Jean (age 2); the Bockstahlers, Bocky, Vange, and Larry (age 16); the deZeeuws, Don and Ann (age 3); the Steinbauers, George, Cecelia (Brady), Marian (age 16), John (age 11), and Patricia Anne (age 4); and the Vaughns, John, Dorothy, Dana (age 7), and Nancy (age 3); make up our group.

Our Minnesota Group started activities in late August with a picnic in the small Okemos (pronounced Oak'-uh-muss) park, a few miles east of M.S.C. Dr. G. H. Coons (the Senator from Washington) was a guest. Vange gave the Stakman sign (a Meerscham pipe held "spout" upwards) to John Vaughn and Ed Andrews. John and Ed plied all with roasted corn, hamburgers, pickles, and interesting beverages.

We haven't given a formal name to our group, as yet, and we doubt if a formal name would suit us. When together, we talk over old times at Minnesota, with nostalgic longing -- that is, if we can keep away from the food that long. "Stakmanites" would be too cult-like. "Stak-eaters" would come closest to being an apt name. Perhaps "Pipe-Go-Outers" might do. The male members insist on

smoking pipes, but you know how it is, they rehash old seminars. The pipes wave through the air, and the men won't stop talking long enough for a good puff once in a while.

After Mrs. Bockstahler's return from the Pillsbury Bake-Off in New York, she wanted the group to share in her luck somehow. She decided Bill Loegering's visit, on his way to the A.A.A.S. meetings, would be the proper time. She prepared a little buffet supper to display a few things she picked up at the Waldorf (ideas, not articles.) The wonderful part about our group is that it is not necessary to provide games of entertainment. We EAT, and then we TALK, talk, talk, and talk! It was grand seeing Bill again.

In February, at the Sugar Beet meetings in Detroit, John Vaughn, Axel Andersen, Bocky and Vange heard Dr. Stakman's address on "Science and Progress." Andy Downie was there from Colorado. Needless to say, Stak took the crowd by storm. After the dry, statistical material presented previous to his dissertation, his dynamic words were both thought-provoking and wonderful to hear!

The Sparrow Hospital of Lansing is being renamed The Vaughn. At least it should be! John's mother has been there for over three months. The youngest Vaughn, Nancy, is recovering from a tonsilectomy. John has just returned home after a week of an off-again, on-again attack, apparently appendicitis. This was finally decided in John's favor, without the operation, at least for the present.

Marian and Ed Andrews have had their fair share of children's illnesses to combat this winter, but are now going into the spring quarter full of plans for their new home. Cecelia and George Steinbauer are erecting a new home, also. The ockstahlers are in the process of evening and week-end completion of their home.

The last meeting of the group was at the Vaughns in the form of a Bohemian party (typical of these parts) where each couple brings some special dish. Since there are some pretty swell cooks in the group, the food was delicious, so of course the party was a success.

#### RESEARCH

George Steinbauer is tied up most of the time with his teaching. He is advising several graduate students, however, one of whom is continuing a problem begun by George himself. The work included studies on correlation of tree growth and environmental conditions; the effects of light intensity on the Iron-Manganese ratio of plants grown in nutrient solution; and the use of tetrazolium compounds as tests for seed viability.

Ed Andrews is really too rushed by his extension work to give much time to research but is nevertheless usually looking into something new and interesting. There are no subject-matter specialists here on cereal, forage, and turf diseases, so he has made them his pets, along with the large amount of other diseases with which he must be familiar. Diagnosis is his big job but he has lots of samples to choose from when he desires cultures for other purposes than routine. Ed has been working more or less in informal cooperation with John Vaughn on the turf diseases and wished to mention that 1949 was one of the worst years so far for the "melting out disease of turf."

John Vaughn is carrying on various phases of the Actidione research for himself and through graduate students in addition to teaching. Among the graduate projects are studies of spore germination as influenced by various nutrients and Actidione and the action of wood-rotting fungi in treated lumber. Actidione is about the only material they have found so far that shows any promise in the control of "melting out" of turf.

H. W. Bockstahler is the big sugar beet man, as you should know if you have been in Minnesota in recent years. Although now located in Michigan he is still responsible for direction of work in Minnesota, and in Ohio and Wisconsin as well. He and Hogaboam (plant breeder) are coordinating their work with Chuck Schneider at Minnesota in the program for breeding for resistance to black-rot of sugar beets. Bocky says that he plans to begin work on determination of possible biotypes of the black rot fungus and its host range now that he is settled in his new laboratory. The program of inbreeding for the development of resistant strains is under way, and they are utilizing the male sterility factor in production of their hybrids.

Axel Anderson is one of those people who are always biting off more than they can chew and then somehow managing to chew it. Axel cooperates with everybody, both literally and figuratively. At present his duties are spread out over the U.S.D.A., Michigan State College Farm crops department and the Department of Botany and Plant Pathology. His research is on bean breeding with special reference to breeding and testing for resistance to the blights, viruses and Anthracnose. In his spare time he and deZeeuw are cooperating on some seed-treatment work with peas and beans.

Don deZeeuw has several projects on the fire. The one long-term project is breeding a honey rock muskmelon for resistance to Fusarium wilt and Macrosporium leaf spot. Several additional projects on Asparagus rust, carrot yellows, cucumber scab have been set up but are barely under way. Every year he has a cucurbit spray plot in which several old stand-by sprays and some new materials are tested on cucumber and muskmelon. Part of this work is in cooperation with John Vaughn. A large part of his work in the winter is seed-treatment testing. During the past year part of that has been in cooperation with Axel Anderson. At present the most interesting phase of the seed treatment work is the study of the specificity of fungicides and varietal reaction to treatment.

#### TEACHING

Enrollments in courses in plant physiology have skyrocketed along with other phases of botany. During the last three years between 400 and 500 students have signed up each year for courses in physiology. The largest segment of this load is the elementary series designed for agriculture and forestry undergraduates, handled by Prof. Beeskow. Another large group is the two-term course, Plant Metabolism, followed by Plant Growth. The latter course is designed for undergraduate botany majors and graduate students in botany and allied fields. The above two courses are given by G. P. Steinbauer. Other more specialized courses include Weed Control by B. Grigsby, Principles and Techniques of Seed Testing by G. P. Steinbauer, and current problems by F. L. Wynd. A total of twelve graduate students are majoring in plant physiology. Their fields of research cover such varied subjects as weed control, virus transfer by use of radioactive isotopes, correlations between tree growth and

environmental factors, mineral nutrition relative to boron, manganese, selenium, iron; use of chemical indicators of seed viability and physiology of disease resistance. Our new quarters have greatly facilitated teaching of physiology courses, although our main teaching laboratory is on a 50-hour week to accommodate all courses. We don't know if such hours would pass modern "union rules"--however we are all thankful that we have graduated from the ancient botany building.

Being a double-barrelled department (Botany and Plant Pathology) there are courses given in Histology, Anatomy, Morphology, Taxonomy, Phycology, Cytology, Cytogenetics and Ecology and Phytogeography. The Plant Pathology teaching program is handled by John Vaughn and Tom McClure (arrived last fall with a PhD from California, MS. Rutgers, B.S. Harvard). In addition Forrest C. Strong teaches courses in Shade tree pathology and forest pathology. There are 4 elementary courses in pathology, General, Fruit, Vegetable and Field Crops, and Ornamental diseases taught by Vaughn and McClure. Advanced courses taught by Vaughn include Principles of Control, Principles, Genetics of plant pathogens, History of Plant Pathology--not all given each year, of course. There is a class seminar like the Minnesota one--every Thursday at 4, and the evening seminar meets on the 1st and 3rd Thursdays of the month.

During the school year 1948-49, Dorothy Vaughn taught plant pathology courses until the position was filled by McClure.

#### EXTENSION

The privilege of extending plant pathology to all within the borders of Michigan has been inherited from such eminent extenders as Doctors J. H. Muncie, L. Knorr, and J. R. Vaughn.

The aforementioned extenders disseminated potato pathogens so effectively in Michigan that some county agents and growers are as good potato pathologists as many general plant pathologists--including the writer (to his chagrin.)

The present extender, Ed Andrews, was treated with the inoculum of many diseases of forest trees, cereals, forage crops and grasses for many, many, many years as was the custom in the days when towers tottered and graduate students quaked. After considerable aging in that potent brine he was subjected to white pine blister rust, dutch elm disease, and strawberry red stele in Delaware followed by brief submersion in a concentrated suspension of the diseases of fruit, vegetables and cereals in Pennsylvania. Equipped with this multiple infection the incumbent extender is especially suited to the dissemination of very dilute spore suspensions of many pathogens--few of which find an infection court or stimulate more than a resistant reaction.

He has proceeded to do so--with much ineffectual zest--for the past two years--nearly 20,000 miles worth of travel during 1949. Be it known that Detroit is 518 miles from Washington D. C. and 608 miles from Ironwood, Michigan. During the process of dissemination his disease complex is being complicated further by stone fruit viruses, vegetable diseases, Septoria spp. on cereals, and many of the diseases of ornamentals, to mention a few.

At long last in this obstacle course dignified by the name of professional plant pathology, the writer is encountering diseases or disease complexes that are recognized from previous encounters and knowing some of the answers. It is a grand experience. A few examples include late blight of tomatoes first fumbled in Delaware, Victoria blight of oats booted in Pennsylvania, stalk rot of corn absorbed under J.J.C. at Minnesota, sooty blotch and fly speck of apples learned from R. S. Kirby.

Visitors - (In the last year or two) Minnesotans and Ex. Minnesotans

Downie, Wahl, Tveit, Sharvelle, Loegering, Butler, King, Kernkamp, Schneider, Schuster, Melander, Regnier, Marvin, Henry, and Bulger.

"OLD TIMERS" at Parke, Davis & Co.

To coin a new phrase: "The sun never sets on Old Timer territory," and Detroit, Michigan, is no exception. Carrying on the tradition in this vicinity are John Ehrlich, formerly with the Penicillin Project at Plant Pathology, and Morris Teller, "degreed" in '48.

As with other drug manufacturers, Park, Davis & Company recently completed the cycle. Commonest early manufactured items were natural products, mostly extracts from higher plants. The trend then changed to synthetics, finally swinging back again to natural products, the antibiotics from lower plants. In recognizing this trend, Parke, Davis erected a new building especially designed for microbiological fermentations. The Old Timer flag flies atop this building.

John Ehrlich bid farewell to the department late in 1944 to join the Research Department at Parke, Davis. There he took charge of antibiotic research, consisting of searching for new antibiotics, evaluating promising ones, and doing the initial strain and media work for the useful ones as penicillin, streptomycin, and chloramphenicol (Chloromycetin). His major part in the discovery of chloramphenicol is well known throughout the scientific world.

With all of his exacting responsibilities, it is surprising to find that domestic problems, such as repainting an old house acquired in 1947, do not faze Ehrlich. He even finds time to dabble in child psychology, his lesson for the week being on how to bring up parents properly. To quote John: "My son John Wilson, born Thanksgiving Day (Nov. 22, 1945), now uses his own microscope and likes nothing better than to correct the old man's all too shaky bacteriology." Sounds like the F<sub>1</sub> will be another top microbiologist!

The Antibiotic Development section carries on-where Ehrlich and his staff leave off. As part of this section, Teller and his staff continue the never-ceasing effort to find new strains and new media, as well as attempting to elucidate the metabolism of the organism involved. Developments are coming along rapidly.

The Tellers, after reading the home-making magazine articles wherein an old ramshackle barn is easily turned into a mansion by dint of \$1.69 worth of lumber and paint and 2½ hours of easy labor, decided to rent an old house and try their skill. Conclusions arrived at are: Old homes have too darn much wall and ceiling area; you can't make a purse out of a sow's ear; being a plant pathologist is infinitely better than being a painter. They report, however, that they are

happy in having much larger quarters, and have set aside one bedroom for visits from past, present, and future habitues of Plant Path.

It might be mentioned that Minnesotan morale here is kept at a high pitch by the presence of M. G. Mueller and C. H. Ferrizo. Mueller, formerly from Faribault, took his undergraduate and some graduate work at Minnesota, and is now Antibiotic Development manager. Some of you may remember his recent visit to the department. Ferrizo, on Teller's staff, is a former bio-chemistry student of Dr. Geddes at Minnesota.

We all join in sending sincere greetings to our friends.

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#### MINNESOTA SUPPLEMENT

P. R. MEHTA, Kanpur, India, hopes to have a rust greenhouse in the hills. ---Isaac WAHL broke a leg on board ship to Palestine in March. New address: Mikveh-Israel Agricultural College, Tel-Aviv. ---Eric SHARVELLE was heard from in February from Honduras, but we've lost the letter, which said something about bananas. ---Arden SHERF is now located at Iowa. ---George HAFSTAD is plant pathologist with the Wisconsin State Department of Agriculture at Madison. ---Robert ATKINSON participated in a mosaic symposium at the hard red winter wheat conference in Oklahoma. ---Dick DAVIDSON was in school again in February at the Oak Ridge Institute for nuclear studies. ---"Tooty" ANNEXSTAD visited us February 10. ---Cigars and candy came from Honolulu on new-father Harry MURAKISHI; son born December 14. ---A daughter was born February 10 to H. H. THORNBERRY, Illinois. ---A. A. ANWAR unfortunately found it necessary to move his family from Hyderabad to Karachi, Pakistan, where he was doing honorary work in the Bureau of Laboratories in January. Address Ward 8, Jinnah Central Hospital. ---Dr. HASANAIN is editor and founder of Agriculture Pakistan. ---Larry TYNER says of winter in Edmonton (Canada): We are having a winter to end all discussion of past winters. ---J. G. GIBBS has participated in expeditions to the sanctuary of the New Zealand living fossils, the nocturnal tuatara lizard and its kin, of the Jurassic age. ---Colorado's Dorothy GORDON was married in Alaska recently. ---

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It is with sincere regret that we record the passing on March 22 of Erick F. Johnson, our building caretaker. Unceasing in his desire to do excellent work, he gave generously of his energies and kindness for all of us. We admired him for his workmanship, respected him as a gentleman, and miss him every day as a friend.

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After a long slow period, preliminary examinations have lately been coming thick and fast. Recent prelim passers include Munnecke, Khan, Cohen, Boosalis, Baskin, Kommedahl, Goodman, Stewart, and Matt Moore.

Closely coinciding with the Munnecke prelim was the birth of the third Munnecke F<sub>1</sub>, Thomas by name. A new Butler is also on the record, called Stephen Charles.

Robert J. Mullin came from Virginia to submit a Ph. D. thesis, which the committee accepted on February 3.

Little Chief J. J. Christensen departed by air on February 27 for three months in Japan, where, among other things, he will go into the production and disease control of cereal crops.