

The University of Minnesota



DRILL HALL, SCHOOL OF AGRICULTURE

The Department of Plant Pathology is currently part of the College of Food, Agricultural, and Natural Resource Sciences at the University of Minnesota. The department began as the Division of Vegetable Pathology and Botany on August 1, 1907. Edward M. Freeman served as chief from 1907 to 1940. He established two sections: Plant Pathology, headed by E. C. Stakman, and the Agricultural Botany and Seed Laboratory. The division name was changed to the Division of Plant Pathology and Botany in 1913. In 1952, it was renamed the Department of Plant Pathology and Botany. It was renamed again in 1963 as the Department of Plant Pathology and Physiology and in 1967 as the Department of Plant Pathology, which is the current name. In 1913, the first Ph.D. degree was granted in the College of Agriculture, to a plant pathologist, E. C. Stakman.

Early on, the teaching program was strongly emphasized. Classes were organized around genetics, ecology, and physiology of plant pathogens in addition to courses on the pathogens and the diseases they caused. Principles were stressed in a capstone course for doctoral students near the end of formal course work. A 2-hour seminar with extensive queries and interactions was typical. In addition, an informal evening seminar (now discontinued) fostered a well-rounded education in plant pathology, and science in general. Professor Stakman was a central figure in both seminars, which served to expand on and enliven classroom learning.

October 2007



S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Photo courtesy of the Minnesota Historical Society.

The teaching program attracted students from other disciplines on campus and from other states and countries. To maintain contacts, an annual departmental newsletter called the *Aurora Sporealis* was started in 1924 and is ongoing.

Early research in the department focused mainly on cereal diseases, especially stem rust, following Stakman's discovery in 1915 that physiologic races of the stem rust fungus differed in virulence. The development of the principle of physiologic specialization in *Puccinia graminis* f. sp. *tritici* helped provide the basis for the breeding of disease-resistant crops until World War II. A linkage of the department with the USDA Cereal Rust Laboratory (now Cereal Disease Laboratory) was the basis for considerable research. Because of the aerial dispersal of rust spores, aerobiology became a focus of research. Also, as the barberry was the alternate host, its eradication was an active strategy to fight stem rust epidemics and was supported by government and industry. After that, research was diversified to include insects in plant disease, biological control, viruses, nematodes, abiotic diseases, mycotoxins and the deterioration of stored grains, and physiology of plant pathogens. In recent years, research has expanded into environmental pollution, wood deterioration, urban forestry, and microbial genetics. Work on deterioration of stored grain by fungi, led by Regent's Professor C. M. Christensen, was nationally acclaimed.

In 1908, cooperation began with the USDA; federal personnel have been in residence since 1915. E. C. Stakman was a part-time federal employee directing rust investigations until he retired in 1953. The USDA also supported research on diseases of sugar beet and flax from 1930 to 1966. Research shifted from race identification to increasing emphasis on genetics and molecular genetics of the host-parasite interaction. Similar cooperation was effected with the USDA Forestry Service–North Central Research Station. The collaboration of the department with the USDA Cereal Disease Laboratory and the North Central Research Station led to adjunct appointments with the department.

The department has been active in international programs, first in Mexico in 1943 with the Rockefeller Foundation and the Mexican Department of Agriculture. An exchange of students between Minnesota and Mexico ensued, and some were subsequently employed in the Mexican program, including Nobel Laureate Norman Borlaug. Similar programs were initiated later in Colombia and Chile, the Philippines, India, Korea, Israel, Indonesia, Thailand, and Morocco.

Today, the department is located in three major buildings: the four-story Stakman Hall, the three-story Christensen Laboratory, and part of the six-story Borlaug Hall. The Plant Pathology Bio-Safety Level (BL3) Laboratory was constructed in 2007.

The Department of Plant Pathology celebrated its 100th birthday September 16–22, 2007.

Prepared by Thor Kommedahl