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THE
MICROSCOPE



ONE HUNDRED YEARS OF MICROBIOLOGY
AT OREGON STATE UNIVERSITY

Jim Fisher

CHAPTER 3

COMING OF AGE • 1910-1919

In 1910, when Emile Pernot left Oregon Agricultural College, enrollment had increased to 1,591. The population of Corvallis had increased to 4,552 while the state's population had grown to 672,765.

At this time, the department had moved into what eventually became the north wing of Agriculture Hall. Other wings were added in 1911 and 1913. Eventually, the department occupied space in all three units.

In July, 1910, the Board of Regents hired E. G. Peterson as professor of bacteriology to teach for the 1910-11 school year. During the 1911-12 school year, the bacteriology faculty included Professor Peterson and Assistant in Bacteriology Godfrey V. Copson. The catalog introduced the fourteen courses offered with this statement:

"The work of the Department of Bacteriology is along three lines: 1st, general courses offering the fundamentals of bacterial activity; 2nd, special courses making application of the knowledge of bacteriology to agriculture, dairying, domestic science, veterinary science, and pharmacy; and 3rd, original investigations."

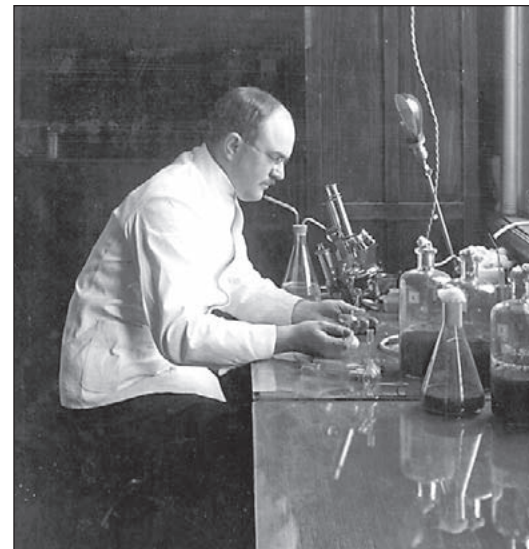
RESEARCH

The 1910-12 biennial report of the Experiment Station included information on the study of soil bacteria from the nearby college farm and from substations in northeastern Oregon at Union and Hermiston. Other work involved providing cultures for seed and soil inoculation to more than three hundred farmers throughout the state growing alfalfa, vetch and clover crops. Benefits realized by the farmers ranged from five to one hundred percent.

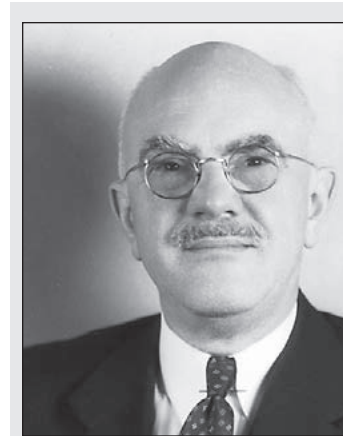
Other studies had been done with yeasts to make ciders and vinegars. In dairy bacteriology, work was underway to study milk quality to manufacture high grade butter. Routine examinations were made to help improve health and sanitary conditions, including examinations of water. Research in pathogenic microbiology focused on hog cholera and diseases of poultry, most notably avian tuberculosis.

BECKWITH NAMED DEPARTMENT HEAD

In 1912, Professor Theodore Day Beckwith became head of the Department of Bacteriology. He came to Oregon Agricultural College from North Dakota College. Walter B. Bollen, a student of Beckwith's at the time and later a long-time faculty member of



Professor Theodore Beckwith became the second Department of Bacteriology head in 1912.



Professor Theodore Day Beckwith

Theodore Day Beckwith

Theodore Day Beckwith was born on December 8, 1879, in Utica, New York, the son of Theodore George and Jane (Day) Beckwith. He received a bachelor of science degree in 1904 and a master of science degree in 1907, both from Hamilton College in Clinton, New York. During his graduate studies, Beckwith was an expert science assistant and bacteriologist with the U. S. Department of Agriculture's Bureau of Plant Industry.

In 1907, he accepted employment as assistant professor of bacteriology and plant pathology at North Dakota College at Fargo. Three years later, he was named professor at the college and assistant botanist at the North Dakota Experiment Station.

In 1909, he married Cornelia Lyon in Fargo, North Dakota. From this marriage came four children: Josephine, Jane, Stephen, and Theodore, Jr.

In 1912, Beckwith accepted the position of head of the Department of Bacteriology at Oregon Agricultural College to direct teaching and research. In addition, he was bacteriologist with the Oregon Agricultural College Experiment Station.

From 1918 to 1919, Beckwith served as an officer in the U.S. Army Sanitary Corps during World War I. He was discharged in April 1919 and resigned from Oregon Agricultural College in August of that year to complete his doctoral studies at the University of California at Berkeley.

the department, recalled that Beckwith "was a rather large man, fairly heavy-set, very jovial, kindly and extremely well-educated, well-informed."

Completing the faculty that year were Alonzo F. Vass as an instructor and Godfrey V. Copson as an assistant instructor.

Peterson apparently left with the hiring of Professor Beckwith.

CURRICULUM

Bacteriology courses were rearranged, renumbered and expanded for the 1912-13 college year. Courses included elementary, general and advanced bacteriology, as well as specific fields of study.

Among these were pharmacy, domestic science, agronomy and sanitation. New courses included pharmacy bacteriology, immunity and vaccine therapy and zymology, all offered for the first time. Another new course was provided in water and sewer bacteriology for seniors in civil engineering. Thesis was listed under research in bacteriology and offered for junior and senior years.



Laboratory conditions were very basic when Professor Beckwith (standing at left) came to the department.

"The laboratory is especially equipped for work in agricultural bacteriology. However, ample facilities for research in veterinary, domestic science, or pharmaceutical bacteriology are at hand," the catalog stated.

Beckwith, following a pattern set earlier by Pernot, introduced this curriculum with a challenge:

"The relationships of the comparatively new science of Bacteriology to everyday life in the various industries have increased so largely in numbers and intimacy that it is necessary for any student properly equipped in Dairying, Agriculture, Agronomy, Pharmacy, Domestic Science, etc. to have a working knowledge of the subject."

During the 1913-14 school year, laboratory fees ranged from \$1.50 to \$2.00 for each course.

After receiving his doctorate in 1920, he accepted a position as associate professor of bacteriology at the Berkeley campus and as a member of the California Stomatological Research Group. In 1932, he moved to the University of California at Los Angeles as associate professor of bacteriology and was promoted to professor in 1933. A year later, he was named head of the bacteriology department at the University of California at Los Angeles and served in this role for twelve years. Beckwith continued as head of the bacteriology department at the University of California at Los Angeles until his death on July 18, 1946, at the age of sixty-six.

During his career, Beckwith wrote many articles and publications on water supply, sewerage treatment, germicides, bacteria, pulp and paper operations and both medical and dental bacteriology.

SECOND THESIS

The second thesis for a master of science degree for bacteriology studies was approved on June 1, 1913. Assistant Instructor Godfrey V. Copson, who later succeeded Beckwith as department head, submitted a thesis on "An Efficiency Test of the Albany Filtration Plant." The thesis proposed tests to maintain the quality of the water during changing weather conditions for the water system of the City of Albany. The original thesis is on file at the Oregon State University Valley Library and a true copy is located in the Department of Microbiology.

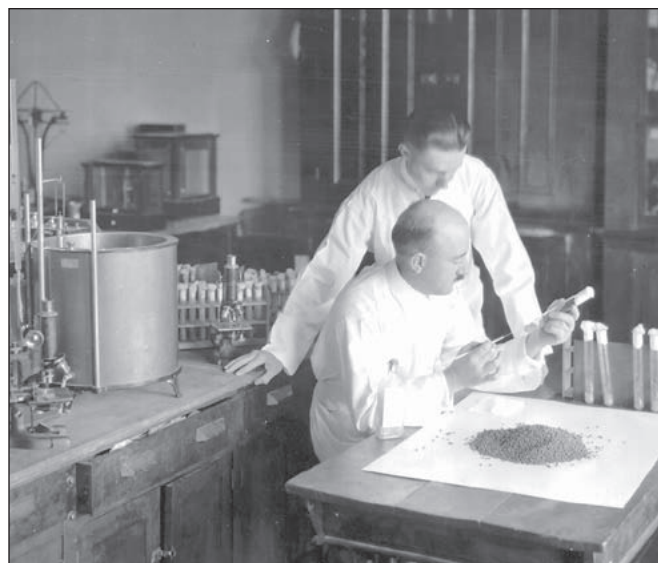
FACULTY CHANGES, 1914-17

The 1914-15 college catalog reported several faculty changes. Beckwith continued as professor and head of the Department of Bacteriology and Vass became assistant professor. George D. Horton and a Mr. Curtis completed the listed faculty. Copson was on leave for graduate study. Beckwith and Vass continued as faculty members for the 1915-16 school year. Copson returned to the department as an assistant professor, advancing to associate professor in two years, and Ralph McBurney was added as an instructor. Later, the 1914-16 report of the Experiment Station stated that at the end of the 1915-16 school year, Vass had been "dropped from the staff on account of repeal of Experiment Station funds."

Mark H. Middlekauf was added as an instructor in 1916. Middlekauf later left the faculty to enter military service after the start of World War I. He was killed in the war, one of only two Oregon Agricultural College faculty members to lose their lives in that conflict. His sister, Ruth M. Tyson, later provided funds to establish the Mark H. Middlekauf Outstanding Graduate Student Award in the department, as well as undergraduate scholarships, in his memory.

DEPARTMENT CHANGES

A new course on poultry disease bacteriology was listed in the 1914-15 catalog and a comment added that a series of lectures would be given to forestry students on camp sanitation. The 1914-16 Agricultural Experiment Station report stated that a comparison of the Department of Bacteriology's effort for the years 1911-12 and 1915-16, showed that "the amount of instructional work, measured in student credit hours, has increased in five years, for the first semester, $5\frac{1}{2}$ times, and for the second semester, $2\frac{1}{3}$ times. The amount of instructional time, however, available for this increased work is slightly less than $1\frac{3}{4}$ times what it was in 1911-12. It should be noted that there has been practically no increase in the equipment of the department during the biennium." For the school year 1915-16, courses remained unchanged.



Professor Beckwith (seated) found a promising student in Godfrey V. Copson, future department chair.



From 1909 to 1970, the Department of Microbiology occupied portions of all three wings of Agriculture Hall, here having its third wing added in 1913.

Agriculture Hall

In 1909, the Department of Bacteriology moved to the new Agriculture Hall, a building completed that year at a cost of \$30,750. The building contained some 25,890 square feet as the north wing and was later called the Agronomy Wing. In 1911, a central wing was constructed at a cost of \$55,000 that added another 47,152 square feet. It was named the Agricultural Wing.

Finally, in 1913, another 34,206 square feet were added as the south wing at a cost of \$49,701. It was renamed the Horticultural Wing.

In 1914-15, the Department of Bacteriology occupied the fourth floor of the Agricultural Wing. Eventually, the Department of Bacteriology was housed in portions of all three wings, including the basement and the infamous "fifth floor attic."

After Nash Hall was completed in 1970, the department moved to that location. In 1983, Agriculture Hall was renamed Strand Agriculture Hall to honor the ninth president of Oregon State University, August L. Strand.

In May of 1916, Beckwith wrote a five-page letter to Experiment Station Director A. B. Cordley summarizing "the financial value to the state of the activities of this department." Values identified were \$70,678 from cultures sent to farmers after deducting \$400 spent by farmers and \$1,500 spent by the Experiment Station. Added to this was \$27,432 of additional commercial value of the nitrogen fixed by these cultures and \$83,147 for the valuation of additional production of red clover and alfalfa brought about by the use of the cultures. This had resulted in a financial benefit of \$181,257 to the farmers. Additional "thousands of dollars" of value were realized in combating poultry diseases and other "thousands of dollars" in lives saved from 1,332 general laboratory examinations (over half were water examinations). Beckwith pointed out that insurance companies had placed a conservative value of \$5,000 on one human life.

For the 1916-17 school year, courses remained basically unchanged. However, they were listed along definite specialized lines during the junior and senior years. In addition, the catalog mentioned for the first time that a master of science degree could be obtained in bacteriology and students majoring in other fields could minor in bacteriology, if they wished.

DEPARTMENT FACILITIES

For the first time, the 1916-17 college catalog described in detail the training facilities of the department:

"The department of bacteriology is located on the fourth floor of the Agricultural Building. It occupies two large laboratories for general class work, one for special soil bacteriology, and a laboratory for combined Experiment Station and research work. In addition, there are the offices of the members of the department, a small but well-selected library including most of the leading American and foreign periodicals. A dark-room, well equipped for work in photomicrography, a store-room and large incubator room with automatically controlled temperature, is furnished for student use."

Other facilities available were the highest-grade microscopes, ample glassware and lead-topped desks. Sterilizers, incubators, sinks, a high-power centrifuge and other minor pieces of equipment were available. Laboratory fees had increased to a range of two to four dollars a course.

Career opportunities were added to the catalog for the first time:

"The purpose of these courses is to train students for Agricultural College and Experiment Station positions; for work in Scientific Bureaus of the United States Department of Agriculture; for positions as Sanitary and Milk Inspectors with various State and City Boards of Health; as Laboratory Technicians for Health and Sanitary Boards and for Hospital Services; and likewise for testing laboratories for corporations, such as creameries and producers of food products."

SERVICE DEPARTMENTS FORMED

On September 1, 1918, the first of a long series of organizational and name changes came to the Department of Bacteriology. Eleven college departments that offered instructional services to two or more schools were united into an administrative unit under the term "Service Departments." Ezra J. Kraus, dean of the new Service Departments, was responsible for Art and Architecture, Bacteriology, Botany, Chemistry, English, Entomology, History, Mathematics, Modern Languages, Physics, Zoology and Physiology.

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With this organizational structure, the college hoped for a “fuller appreciation of the requirements of the several schools and a constant broadening and strengthening of the instructional work rendered.”

The college also returned to the quarter system from the semester system starting in 1918.

WARTIME IMPACT

In 1918, a report written by Dean Ezra J. Kraus addressed the growing impact of war conditions in Europe on Oregon Agricultural College:

“One entirely new course, designed to train students for the Sanitary Corps, was instituted with success by the Department of Bacteriology, assisted by the Departments of Chemistry, Zoology and Physiology, and Modern Languages.”

The department’s section of the college catalog also carried the statement “Military Value—The various courses in Bacteriology are of direct value in preparation of men for the Sanitary Corps and the Medical Corps of the United States Army and Navy.” A new course, military sanitation, was offered in the department. It involved “a discussion of the laws of sanitation as applied to military practice. A war-emergency course dealing with the sanitation of the camp, protective inoculations, the carrier problem, and other questions of like nature directly related to the health of the recruit. Open to all students . . . No fee.”

Walter B. Bollen later recalled taking this course as one of several students interested in bacteriology.



In 1912, Oregon Agricultural College was beginning to grow.

FACULTY CHANGES, 1918-19

World War I made other impacts on the Department of Bacteriology. At the start of the 1918-19 college year, only Beckwith and Copson were listed as bacteriology faculty. Then, Professor Beckwith took leave at the end of spring term of 1918 to become an officer in the Sanitary Corps of the United States Army and Godfrey V. Copson was named acting head of the department. That same year, Leslie C. Whitaker was hired as an assistant instructor. A new instructor, Joseph E. “Mike” Simmons, a future department chair, was added to the faculty in 1918.

BECKWITH RESIGNS

With the close of the war, Beckwith returned from the service, but left Oregon Agricultural College in August of 1919 to complete his doctoral studies at the University of California at Berkeley. During Beckwith’s tenure as department head, the department had continued to grow in stature on the campus, despite faculty reductions during wartime. However, the next few years would see other changes come to the growing department.