



PROFESSOR H. W. CONN

PROFESSOR H. W. CONN

W. M. ESTEN

Connecticut Agricultural College, Storrs, Connecticut

It is a pleasure to write of the life and work of a teacher with whom the writer was so pleasantly associated in both teaching and investigation for sixteen years. Professor Conn takes his place among the prominent biologists of the nineteenth century. His achievements are particularly interesting and noteworthy because they cover the pioneer period of the branches of science which he made his specialties. He was at the front in the great advance made in biological science in the past thirty years, but at no time lost his deep interest in the social welfare of all mankind. His dominant work was in dairy bacteriology, although he taught and expressed some of the most profound principles of agricultural science in the relation of bacteria to crop production. He was always on the right side of all public and social problems, although he was given ample opportunities to testify on the questionable side of public welfare controversies at large remuneration.

As a teacher, perhaps, he reached his highest achievement, as is attested to by more than two thousand students who came under his influence. His personal magnetism, polished English, interesting illustrations and illuminating suggestions captivated his listeners. His teaching was masterful, and with him it became an art. He was able to make a difficult subject easily understood, and the breadth of his conception of the subject at hand was remarkable. This breadth of view acquired from very extensive reading made a lasting impression on the mind of the student. No one could attend his lectures without acquiring a wider and truer view of life and its problems. In laboratory teaching his pleasant suggestiveness and persuasive leading stimulated the student to acquire knowledge for the mere pleas-

sure of it. His was the method of Agassiz. He instructed his assistants to give as little help as possible until the student had reached the limit of his own observation. "Let them find it out for themselves," was the trite saying which proved that he well knew the true methods of acquiring an education. He was able by clear and concise directions to conduct laboratory sections in general biology for over seventy students at a time.

As a member of society he could converse entertainingly and instructively on almost any topic of interest. He had the courage to attack any problem, no matter how difficult, and always labored at its solution with great perseverance.

The most interesting phase of his life's work was accomplished in dairy bacteriology. At the time of the founding of the Storrs Agricultural Experiment Station by Dr. Atwater in 1889, Dr. Conn commenced the studies of the organisms which ferment milk. In the first report of this Station will be found an account of this early work. In 1890 he isolated bacterial enzymes from pure culture which when added to milk in powder form caused a curdling and subsequent digestion. In the fall of 1891 was commenced the study of the organisms that ferment ripening cream. As each kind of bacteria was isolated it was given a number. When the exhibit was installed at the World's Fair, Chicago, in 1893, to show the effect of bacteria in the production of flavor in butter, some thirty-five varieties of organisms had been isolated. No. 2 at that time produced the best flavor, and No. 16 the worst. The latter was sickening, brackish, and persistent. These two organisms were used daily at the fair in the ripening of cream for churning. An upright case was installed in the exhibit. This case held about forty large test tubes which showed the effect of pure cultures growing in milk. The exhibit attracted a great deal of attention and the city papers published long descriptions of it. During the same summer eight or nine varieties of bacteria were added at the fair to the list, most of them isolated from a can of milk from Uruguay. Among them was the remarkable and famous "B 41." Following this came the development and application of cream starters which gained practically universal use throughout the

United States. At the same time blue litmus gelatin was developed for the isolation of acid bacteria. From this experimental work in the bacteriology of milk has been built up a fairly extensive science of dairy bacteriology.

As director for several years in the Summer School at Cold Spring Harbor, Long Island, his capabilities reached their highest achievement. The writer's memories of him at this place are the most cherished of all. We were a happy family. All restraint of forced attendance was removed, but we could not afford to miss a single exercise. His lectures here, as elsewhere, were models of presentation and scope. As there was no church in the immediate vicinity, Dr. Conn would address us Sundays on some appropriate topic.

In his interest of scientific agriculture for the welfare of mankind, and with keen perception and prophetic vision, he presented the problems many years ago which we are today trying to solve. In 1882 Atwater and Woods demonstrated that the legumes were capable of fixing definite amounts of atmospheric nitrogen. Nine years later Professor Conn explained the function of bacteria in the fixing of this nitrogen in the root nodules of the legumes. To the writer a solution of these problems for the benefit of the world appears to be a most worthy goal.

Dr. Conn's influence as a Christian gentleman who was always an exponent of right, teaching the profound philosophy of correct living, will long make itself felt among his many students, associates and friends.