Chapter Six: THE CROWNING YEARS

Robert Crawford
University of Nebraska-Lincoln

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THE CROWNING YEARS

The years from about 1909 to 1923 were the crowning years in the history of the College of Agriculture. Could Professor Thompson, the first professor of agriculture, and those early residents of the state who wagged their heads at agricultural education have stepped into the farm campus in 1923, Professor Thompson would have found his most sanguine dreams more than realized, while those who scoffed perhaps would have remained to learn. They would have found nine great buildings devoted exclusively to experimentation and instruction, among them the finest agricultural engineering building in the world, a dairy building famous throughout the West, and the best equipped animal pathology plant in the Mississippi Valley. Instead of an unattractive farmstead of the seventies they would have found a magnificent campus laid out with trees and flower beds, a paved street running alongside the farm, and street cars to the door of the institution. Instead of ten or fifteen students studying agriculture, they would have found some one thousand students, men and women, about half of them enrolled in a practical high school course emphasizing agriculture and home economics and the other half enrolled in a regular college course. They would have found some seventy members of the college faculty, and nearly as many more connected with other branches of college activity, a great state-wide Agricultural Extension Service reaching every corner of the state with its force of county agents and extension specialists, three experimental substations in western Nebraska, a school of agriculture at Curtis, Neb., and a fruit farm near Union.

If the preceding period, dating from about 1890 to 1909, was the period in which agriculture came into its own, this was the period in which the Agricultural College came into
its own. The first big thing that happened during these years was the action of the Legislature in 1909 in dividing the Industrial College into a College of Engineering and a College of Agriculture. Once more the College of Agriculture was a unit by itself. The next big thing was the provision of the Legislature in the same year for two additional substations to be maintained in connection with the College of Agriculture. One of these was located at Valentine, and the other near Mitchell. With the substation at North Platte, this now made three substations under the control of the University. Then, in 1911, came provision for the school of agriculture in western Nebraska, located at Curtis.

The Agricultural Extension Service, as it is known today, really had its birth in this period. It was an outgrowth of the farmers' institute, and soon, thanks to the Smith-Lever Act of 1914, providing federal aid, became one of the most important lines of college activity, ranking in importance with the experiment station. Legislation providing for county aid for agricultural agents, or farm demonstrators, was passed by the Nebraska Legislature in 1913, and the first county agents in Nebraska began to be appointed about this time. The development of this extension work, along with that of the experimental substations, will be left for later discussion.

But the thing that made the most difference in the actual appearance and development of the material side of the institution goes back to an agitation which had been going on for a number of years to have the main University on the uptown campus moved out to the Agricultural College, or else to have additional land purchased uptown. Briefly, the University needed more room, both for immediate and for future needs. The attendance in all the schools and colleges of the University had increased to 3,992 (unrepeated names) in 1909-10. In this connection it is interesting to note that by 1915-16 the attendance had increased to 4,826, notwithstanding that a few years before the roster
had been pared by removing the names of students in an affiliated school of music, as well as those taking University extension work without credit. In 1923-24 the total registration had grown to 10,352 in all schools and colleges. Here was vindication for those who had anticipated the future by urging a definite policy of developing the institution.

So in the early years of this period there was constant debate and discussion as to the location of the University, whether it should remain uptown or be moved out to the Agricultural College. The Legislature in 1913, however, decided to refer the matter of location to the people of the state. At the same time it made the important provision that there be a special University extension fund, consisting of the proceeds of a tax of three-fourths of a mill on the dollar valuation of the grand assessment roll of the state, to be levied in 1913 and annually thereafter for six years to and including the year 1918. If the people of the state voted that the main part of the University should stay where it was, one-third of the money realized from the tax was to be available for the purpose of erecting buildings on the farm campus and two-thirds of the money was to be available for development on the city campus of the University.

The people at the general election in 1914 voted to keep the University downtown and so the College of Agriculture came into possession of one-third of the special levy. This special levy was extended in 1919 for another two years. In the latter years, owing to the sudden demands on the University in the way of increased expenses, incident to the War and the subsequent boom, some of the money was used, by authorization of the Legislature, for maintenance and salaries. The building program at the Agricultural College prospered greatly during these years. The plant industry building was erected in 1912 and 1913 at a cost of approximately $87,000. It now houses the departments of horticulture, entomology, the work in botany
and plant pathology, and part of the department of agronomy. The new dairy building was erected in 1916-17 at a cost of $175,000. The agricultural engineering building came next, in 1918, at a cost of $195,000. Finally came the group of buildings for animal pathology in 1919-20, erected at a cost of about $133,000. Of course one might also include in the work of this period the hog cholera serum laboratory, erected in 1911-12, and the horse barn and the new boiler house in 1915-16.

It must be remembered that the World War came in the later years of this period. To the University this meant many things. Students began to withdraw to enter training camps and to enlist in the Army and Navy. Soon there came an insistent demand for greater food production and the College of Agriculture, thru its extension service, found itself charged with carrying on the work in food production and food conservation. County agents, supported by government aid, were placed in nearly all important farming counties of the state.

Those who had been compelled to take military drill during two years of their college course now found that instruction of practical benefit. The service flag of the College of Agriculture, embracing both school and college, carried 550 stars, representing students, members of the faculty, and alumni serving in the Army, Navy, Marine Corps or Red Cross. General John J. Pershing, who had served in the early nineties as commandant at the University, was placed in charge of the American Expeditionary Forces. Chancellor Samuel Avery of the University became a major in the Chemical Warfare Service. Prof. L. W. Chase of the department of agricultural engineering became a major in the Ordnance Department. Dean E. A. Burnett of the college was called to Europe early in 1919 for service in the Army Overseas Educational Commission at Beaune University. The University of Nebraska stood fourth among all universities in percentage of enlistments among the student body.
A sad feature naturally was the number of young men who gave their lives in defense of their country. Those known to have died in service included:

**COLLEGE OF AGRICULTURE**

Roy B. Berryman, Ex-'21.................................Central City
Frank Colcord, Faculty.................................
Earl Forbes, B.Sc. '18..............................Fairmont
Harold Kelley, Ex-'18.................................Omaha
Edward H. Larson, Ex-'20.............................Genoa
Taylor E. Lewis, Ex-'19.................................Superior
Ivanhoe K. Metz, B.Sc. '17..........................Quakertown, Pa.
Ralph F. Perso, Ex-'20.................................Dalton
Marvin Race, Ex-'22.................................Indianapolis, Ind.
Frank B. Sloan, Ex-'15.................................Geneva
Edward W. Stirk, Ex-'22..............................Norfolk
Harvey E. Vasey, B.Sc. '13..........................Fort Collins, Colo.
Floyd Wambeam, Faculty..............................
Charles R. Wright, Ex-'19...........................Scottsbluff

**SCHOOL OF AGRICULTURE**

Walter Hager ..........................................Lincoln
Thomas Benham, '14.................................Lincoln
Bryan Berryhill, '15.................................Gresham
Norris Burford, Ex-'19.............................Lincoln
Reuben Larson, Ex-'19.................................Aurora
Arthur Moseman, '16.................................Emerson
W. O. Schoenbeck, '10.................................Odell
August Sudbeck, '15.................................Hartington
Dean C. Walker, '14.................................Dunbar
Raymond White, Ex-'17.............................Lincoln
Lemuel Wilcox, '14.................................Polk
Robert Williams, '10.................................University Place

The first effect of the War on the University and college was a decrease in attendance. But soon the University, at the request of the government, began to train hundreds of men in vocational work and in the Students’ Army Training Corps. Barracks were erected at the Agricultural College and practical courses were given there in tractors, wheelwrighting, and automobiles.

A reflection of this war work is to be found even now, in 1923, in the University’s Trades School and in the num-
ber of veterans taking vocational training. The Legislature of 1921 appropriated $75,000 which went to equipping the shops for the trades school. The government paid the tuition of the men taking the work, besides giving them regular compensation for living expenses. The Trades School has been in charge of Prof. E. E. Brackett, who for several years has been connected with the department of agricultural engineering.

The Trades School offered instruction in printing, mechanical dentistry, practical machine shop work, plumbing, electrical work, poultry husbandry, automobile mechanics, and cabinet making. Only the courses in poultry husbandry, automobile mechanics, and cabinet making were offered at the agricultural campus. In July, 1922, there were eight men taking automobile mechanics, ten cabinet making, and thirty-eight poultry raising. In all the courses taken together, including those given on the city campus, there were then over one hundred men enrolled. The total enrollment at one time reached more than 135.

With the division of the Industrial College into a College of Engineering and a College of Agriculture in 1909, Dean E. A. Burnett, who had been associate dean of the Industrial College in charge of agriculture, became dean of the College of Agriculture. Dr. Samuel Avery was acting chancellor of the University in 1908-09 and became chancellor on May 20, 1909. Both Chancellor Avery and Dean Burnett have remained with the University and it has been largely due to their efforts that the Agricultural College has developed to its present strength.

DEVELOPMENT OF COLLEGE WORK

During the few years following the establishment of the College of Agriculture as a unit by itself, enrollment in the agricultural courses picked up rapidly. In two years the college enrollment doubled and in four years it tripled. In 1909-10 there were only 116 men and 49 women enrolled;
in 1911-12 there were 208 men and 124 women; in 1913-14 there were 267 men and 201 women. By 1916-17 the enrollment reached its peak, in that school year 310 men and 282 women, or 592 all told, being registered in the College of Agriculture. Home economics was showing a splendid development, the great increase in number of women, from 49 in 1909-10 to 282 in 1916-17, being evidence of the increasing popularity of that subject. These figures of course did not include the enrollment in the School of Agriculture.

The World War caused many students to drop their studies in order to enlist, while others were obliged to stay home and help with the crops. The total attendance in the college dropped from 592 in 1916-17 to 474 in 1917-18. There were 447 enrolled in 1918-19, 542 in 1919-20, 488 in 1920-21, 507 in 1921-22, 558 in 1922-23, and 565 in 1923-24. The falling off in 1920-21 was undoubtedly due to the money stringency prevailing on Nebraska farms.

The faculty had grown as much in these years as the student body. There were approximately fifty persons listed on the roster of the faculty of the College of Agriculture in the catalog published in 1910. By 1923 this number had grown to approximately 115. Of course it must be understood that in both cases the names of members of the school faculty, experimental workers, and others who were not engaged in teaching in the college are included, but these figures serve well for comparison. About seventy of those listed in the catalog for 1923 engaged in actual teaching of agricultural and home economics subjects in the college.

Under the reorganization of the College of Agriculture in 1909 there were three groups of courses offered. There was one group in agriculture, one group in home economics, and one group in forestry. Forestry, until the work was abolished in 1915, was recognized as one of the departments of the College of Agriculture, altho' most of the instructional work was given on the city campus. In the catalog
published in 1913 there was announced for the first time an agricultural practice group. The other agricultural group was now known as the agricultural science group. The practice group aimed to meet "the needs of those students who come to the college for one or two years with expectation of returning to the farm at the expiration of that time and who wish to get a large amount of agriculture in the early part of the course." Four years' work was outlined in the practice group, however, perhaps with the idea that those deciding to remain in college the entire four years could go right ahead with their work.

The catalog published in 1915 announced a general agricultural group in place of the agricultural science group, an agricultural practice group, and a home economics group. The forestry group had now disappeared. The practice group was announced as a two-year course. The student who desired to go ahead with the work after two years would be obliged to enter the general agricultural group and complete the science requirements. Agriculture for February, 1915, tells something of these changes:

"The Agricultural Science Group has been abolished and a General Agricultural Group has been established in its place, in which the two years of the course are prescribed and the last two years are largely elective. The student coming to the Agricultural College next fall will be able to get one-half his subjects in agriculture in the General Agricultural Group, the rest of the time being devoted to the sciences of chemistry, botany, entomology, and zoology and to the English language. In the second year, the sciences which were taken up in the first year will be continued and other agricultural subjects will be substituted until the student has had at least one course in each of the eight principal departments of agriculture in the college.

"Beginning with his Junior year, the student will select a major subject in which he wishes to become specially proficient and will spend a portion of his time during the next two years in this subject.

"Beginning next September, the student who wishes to take all of his agricultural course at the University Farm will be able to do so, as the Regents have agreed to offer a sufficient number of academic
courses at the Farm to fill the requirements for graduation. On the
other hand, those students who desire may take their general science
and their academic studies at the city campus.

"The Faculty of the College of Agriculture have also reorganized
the Agricultural Practice Group to make it cover only two years of
time instead of four years as was formerly the case. They have cut
out all science requirements in this two-year group, and will permit
the student to devote all of his time to the study of agricultural
subjects. Upon the completion of the work offered, a certificate of
proficiency in farm practice will be given to those students who have
come from the farm and are experienced in practical farm work. Students coming from the city can secure this certificate only upon
completion of a specified amount of practice on farms.

"It is expected that the two-year Agricultural Practice Group
will make it unnecessary for any student with four years of high
school credit to enter the School of Agriculture in order to secure the
largest amount of agriculture in the shortest possible time. This
group is sure to meet the needs of a large number of young men
who have not previously entered the College of Agriculture because
of the time which would have been required in the study of other
subjects before taking up agricultural work."

In the catalog published in 1920 a two-year group in co­
operative business was announced. This group is espe­
cially for mature men who wish training in the management
of co-operative enterprises but who can spend only two
years in college. It embraces a large amount of work in rural economics.

The catalog for 1921 announced a reorganization of the
agricultural courses. Each student today is obliged to
elect a certain group of studies, in most cases beginning
with the second year. There is now one group in vocational
education, one group in animal husbandry, one group in
dairy husbandry, one group in farm mechanics, one group
in plant industry, one group in rural economics, and one
group in poultry husbandry. The work in all the courses
is the same for the first year, thereby giving a student a
year in which to pick out his subject of major interest.
This first year embraces botany, chemistry, English, ani­
mal husbandry, agricultural engineering, horticulture,
dairy husbandry, and military science, giving the young
man a fairly broad outlook before he begins to specialize. The two-year agricultural practice course and the two-year course in co-operative business are still offered, but have never attracted many students.

The work in home economics was also subdivided in the same way as the work in agriculture. There is now one group known as the basic curriculum for professional home economics, another group specializing in home economics education, another group in institutional management, and still another group for those young women who expect to go into agricultural extension work. In 1922 a two-year course in home economics was announced. At the completion of this course, the student is recommended to the State Department of Public Instruction for a certificate entitling the holder to teach home economics in the grades and junior high schools. The department of home economics now maintains a practice house where students live and receive practical instruction in keeping up a home during part of their school course.

At the time of the reorganization of the Industrial College in 1909, most of the agricultural departments had already been established in the preceding years and now it was only necessary to go ahead and develop the work under way. It will be recalled that in 1909 the department of agronomy and farm management was created, which included all the work given in crops, soils and farm management. But in 1911 it was reorganized. Prof. C. W. Pugsley took charge of the work in agricultural extension and also retained charge of the work in farm management. How this was worked out is made plain in the catalog published in 1912. There was agronomy, now listed by itself, with a division or section known as experimental agronomy, and a department of farm management. The course known as agricultural economics which had been given originally by Professor Davisson of the School of Agriculture under the general head of agricultural education had now disappeared. Prof. P. B. Barker was now the ranking professor
in the general work in agronomy. Prof. E. G. Montgomery resigned from the work in experimental agronomy in January, 1912, to take a position at Cornell University, and Prof. T. A. Kiesselbach succeeded him. The department of farm management was carried on by Prof. C. W. Pugsley and Prof. H. C. Filley, who in 1914 became head of the department. It is unnecessary to discuss here the work in agricultural extension carried on by Mr. Pugsley, for that is taken up at length elsewhere. In 1916 Prof. W. W. Burr became head of the department of agronomy. Mr. Burr had had wide experience in carrying on farming experiments for the United States Department of Agriculture in the Great Plains states. Farm management appeared for the first time as rural economics in the catalog published in 1919. The work had now begun to broaden out with courses in rural sociology as well as in farm organization, farm accounting, marketing, and rural economics. Professor Filley has remained in charge of this department to the present day.

Poultry husbandry was one of the new lines of work taken up in these later years. Practically every farm raised some chickens, but heretofore there had been little emphasis placed on the scientific aspects of the subject. The first courses in poultry husbandry were listed in the catalog published in 1916. There were just four courses, including elementary poultry management (two courses), poultry practice, and incubation and brooding, all of them listed under animal husbandry. They were given by Prof. M. E. Dickson who had joined the faculty of the college in 1915. Prof. F. E. Mussehl became professor of poultry husbandry in 1917, succeeding Professor Dickson. Poultry husbandry was listed for the first time as a separate department in the catalog published in 1922.

Agricultural education, or the preparation of young men and women to teach agriculture and home economics in the high schools of the state, had received some attention for several years as a collegiate course. It will be recalled that
such a course had been given by Professor Davisson of the School of Agriculture. This course was continued by his successors, Prof. Fred M. Hunter and Prof. H. E. Bradford. An impetus was given to this work in 1913, when the Legislature passed the Shumway Act providing state aid for high schools teaching agriculture, manual training, and home economics. But the great incentive came when Congress in 1917 passed the Smith-Hughes Act, providing federal aid.

In the catalog published in 1918, two courses in agricultural education were offered, one the history of vocational education, and the other agricultural education. The next year there were four courses, vocational education, organization and administration of agricultural education, method of agricultural teaching, and supervised teaching. In 1920 the work was known as agricultural and home economics education, instruction in teaching home economics having been added. By 1922 the work in this department had grown to eleven courses. In 1922 the name of the department was changed to vocational education.

The department of forestry which had been under the College of Agriculture since its reorganization in 1909 was abolished in 1915. Nebraska had no virgin forests of consequence and there were not the same opportunities for development as prevailed in states like Colorado. Prof. W. J. Morrill, who had succeeded Prof. F. J. Phillips after his death in 1911, had received a call to the Colorado Agricultural College. It must not be thought that this department did not serve a useful purpose in Nebraska. The fact that Nebraska was a treeless state gave this department a fruitful opportunity to urge the planting of trees in the western part of the state, but in deciding to stress those lines of agriculture of greater commercial importance to Nebraska, the education of trained foresters was left to other states.

It is hardly possible to enumerate all the changes that took place during these years, either in the departments or
in the personnel. An agricultural editor was first employed by the college in 1914 to carry on editorial and publicity work. Frank C. Dean first served in this capacity. He was succeeded by Prof. Floyd Wambeam in 1916, in 1918 Prof. C. A. Lewis took up the work, and in 1922 this work was for the second time placed in charge of the author of this history. Agricultural journalism is now taught in the College of Agriculture. For several years a course was offered by the extension service for the benefit of those students who planned on going into agricultural extension work upon graduation.

Prof. F. J. Alway, professor of agricultural chemistry, resigned in 1913, being succeeded by Prof. F. W. Upson. Agricultural botany had become plant pathology and physiology by 1917. Prof. E. Mead Wilcox resigned April 1, 1920. He was succeeded a few months later by Prof. G. L. Peltier. Both of these departments, as far as the instructional work is concerned, are now under the direction of the departments in the Arts College. Professor Upson is now chairman of the department of chemistry in the University. Prof. J. W. Calvin, who resigned September 1, 1920, and Prof. M. J. Blish, the present chemist, have carried on the work for the experiment station. The station chemist and station plant pathologist are in charge of their respective lines of work in the Agricultural College.

Prof. A. L. Haecker, for fifteen years connected with the dairy department, resigned in 1911. Prof. J. H. Frandsen succeeded him. He resigned December 1, 1920, and was succeeded by Prof. H. P. Davis in 1921.

Prof. H. R. Smith, for eleven years a professor of animal husbandry, resigned February 1, 1912, to go to the College of Agriculture of the University of Minnesota. Later he became livestock commissioner of the Chicago Livestock Exchange. He was succeeded by Prof. Ralph K. Bliss of the Iowa State College. In 1914 Professor Bliss returned to the Iowa State College, and Prof. H. J. Gramlich, who had grown up in the department, became its head.
Dr. L. Van Es was called from the North Dakota Agricultural College in 1918 to take charge of the department of animal pathology and hygiene. Dr. J. H. Gain, who had long been associated with the college in that work, resigned in 1920.

In the department of horticulture Prof. R. A. Emerson resigned in 1914 to take a position as head of the department of plant breeding at Cornell University, later to become dean of the graduate college there. Prof. R. F. Howard was then selected as head. He resigned to take effect in 1924 in order to devote himself to active farming operations in Texas. Prof. C. C. Wiggins was appointed his successor.

There were a number of changes in the department of home economics. Miss Rosa Bouton, who had established the work back in the nineties, was succeeded by Miss Alice M. Loomis in 1913. Miss Julia M. Vance was acting head of the department in 1917 and Miss Margaret Fedde became chairman (heads of departments had now become known as chairmen) of the department in 1919.

Prof. O. W. Sjogren became chairman of the department of agricultural engineering in 1920 when Prof. L. W. Chase resigned to enter commercial work. Professor Chase had been largely responsible for the great development of agricultural engineering during this period.

In the department of entomology Prof. M. H. Swenk became chairman in 1919. Professor Bruner, who has given more than a quarter of a century to the service of the institution, is still associated with the department, altho he has been relieved from the more arduous duties in connection with it. The name of Professor Bruner is one of the best known among those who gave their services to the agricultural work of the institution during the nineties and early 1900's. Professor Bruner was chosen to represent the State of Nebraska at the San Francisco Exposition as the state's most distinguished citizen.

Toward the close of this period the College of Agriculture began to offer students all the advantages of a small
college coupled with those of a big University. Students had the advantage of intimate association with fellow students on the college's own campus, and at the same time they could take part in all University affairs, and be a part of the larger University. A better student spirit developed. Departmental clubs and organizations began to be formed. In 1916 the first Farmers' Fair was held, consisting of a parade and a day's entertainment on the college campus. Toward the close of this period there was a concerted effort to have the farm designated as "Agricultural College." For several years it had been known as "State Farm" and later as "University Farm," but the new name best indicated its real purpose.

THE SCHOOLS OF AGRICULTURE

It is now possible to speak of "schools of agriculture" instead of "school of agriculture," for the Legislature in 1911 provided for another secondary school, to be located in southwestern Nebraska. It was to do for the western farm boy and girl what the school in Lincoln had been doing for the boys and girls of the state in general. An appropriation of $100,000 was made by the Legislature, and the Board of Public Lands and Buildings was authorized to pick out the site and arrange for the building.

The Nebraska School of Agriculture, as it was called, was located at Curtis in Frontier County. A substantial brick building, besides other necessary structures, was erected, and the school opened to students in September, 1913. Its enrollment in 1913-14 was 121, including 56 men and 65 women. The next year the enrollment was 199, and for the succeeding years, 193, 161, 141, 143, 175, 172, 197, and for 1922-23, 230. A remarkable feature of this school has been the large number of women in attendance. In 1922-23, for instance, there were 120 women and 110 men.

Besides a regular eight months' course, the school offers a special two months' term after the holidays each year for the man or boy who must stay on the farm most of the
year, and a summer session affording eight weeks' training and instruction for rural teachers. Primarily the school aims to fit young people for a successful life in the open country. It offers all the courses of the ordinary high school and in addition the industrial and agricultural subjects, such as wood work, soils, stock judging, forge work, farm machinery, and the like, for the boys, and sewing, cooking, art and decoration, home nursing, and similar subjects for girls. In addition, there is special work for those who desire to prepare to teach, as well as for those who desire to enter the University of Nebraska on completion of the course.

The school maintains a demonstration farm of 475 acres for working out the practical farming problems of that section of the state. The buildings now include, besides the main building, a superintendent's residence, a gymnasium, a building for agricultural engineering, residences for the engineer and foreman, as well as the necessary barns and sheds.

Cyrus V. Williams was the first superintendent of the Curtis School. He was succeeded about 1918 by Allan P. Davidson. Charles K. Morse has been superintendent since 1919.

The School of Agriculture at Lincoln continued to hold its own. But it may possibly be said that just as this school overshadowed the agricultural courses of the Industrial College in the early 1900's, so today the College of Agriculture overshadows the school. But had it not been for the school, probably it would have been many years before the college farm attained its present-day development. That the school has held its own in the face of the development of agricultural and home economics instruction in the high schools of the state, as well as the development of more four-year high schools, is encouraging.

The attendance in the school for 1910-11 was 602, and for the successive years 574, 661, 688, 618, 623, 632, 526, 793, 895, 686, and 589. The numbers registered in the
The number of women in attendance upon the regular course has seldom been much more than one-third the number of men, except in the War years. The attendance in the full-year course suffered during the War years as it did in the recent financial depression. The total number of graduates of the school is today in the neighborhood of 1,000.

The catalog of the School of Agriculture, published in 1910, announced a four years' course in place of a three years' course of instruction. *Agriculture* in February, 1912, announced a number of changes in the course offered in the School of Agriculture. "Beginning with the next school year, normal training will be added to the course of study in the School of Agriculture," said this announcement. "The course as a whole has been revised and the work of the senior year of the four years' course will hereafter consist of three groups, the Technical, the University Preparatory, and the Normal Training." The University preparatory course was for those who expected to enter the state university, the technical course for those who planned to go back on the farm at the completion of their work, and the normal training group for those who planned to teach in the rural and village schools. This plan of work has been largely followed to the present day.

In addition to the four-year agricultural and home economics courses, there have been from year to year special short courses dealing with such subjects as general agriculture, farm motors, farm tractors, buttermaking, animal pathology, and poultry; in fact, any subject for which there seems to be a special demand may be offered. These winter courses, which last from one week to about one month, are of particular value to mature men, who can get away from the farm for only a short time each winter.

Prof. A. E. Davisson, the first principal of the School of Agriculture, died in 1911. He was succeeded by Prof. Fred
M. Hunter, who later was to have a successful public school career, serving as superintendent of the schools of Lincoln, Neb., and Oakland, Cal., and becoming president of the National Education Association. Prof. Harry E. Bradford became principal of the school in 1912, and has since remained in charge. Miss Mary Virginia Zimmer is assistant principal of the school, succeeding Miss Julia Loughridge in this capacity in 1917.

The Legislature in 1917 provided for the establishment of a School of Irrigation in Scotts Bluff County. The site for the school was located near Scottsbluff and in 1919 an appropriation of $60,000 for improvements and maintenance was made. This school was under the College of Engineering and so we are concerned with it only in passing here. The school had an attendance of twenty-three students in 1920-21 and fourteen in 1921-22. It has now been abolished.

AGRICULTURAL EXTENSION

Perhaps the outstanding development in connection with the College of Agriculture during the last twelve years was the marked growth of agricultural extension, with its extension schools, county agents, home demonstration agents, boys’ and girls’ club work, a press service, county fair exhibits, extension bulletins and circulars, and other forms of activity. The passage of the Smith-Lever Act in 1914 furnishing federal aid for this work as had been done for the general work of the college and the experiment station marked the beginning of extension work on a really ambitious and comprehensive scale. Then came the World War and for a year or so the Agricultural Extension Service with its plans for food conservation and increased production throughout the state found itself perhaps the most important line of work in the College.

We have already learned of the great development of farmers’ institutes, but this was a case where the child outgrew the parent. The farmers’ institute was the father
of the extension work, but it was only a comparatively few years before the other lines of agricultural extension had completely swallowed up the old-time institute.

The climax of the farmers' institute movement was reached in the year ending June 30, 1913, when 224 institutes were held. Then came a gradual decline. For the full year 1914 (reports were now made by the calendar year) there were 186 institutes and also 20 short courses, for 1915 153 institutes, and for 1916 121 institutes. In 1916 there were fifteen short courses. In the annual report of the extension service for the year ending June 30, 1918 (this report apparently was brought to a close at that time), there is this statement:

"Farmers' Institutes have gradually been discontinued in Nebraska and in their place has been substituted the work of the Farm Bureau with its special meetings and definite program of work. Four days' short courses in agriculture and home economics are frequently conducted. A few institutes still survive in some parts of the state, but these are being encouraged to affiliate with the Farm Bureau and to turn their program into its program."

The passing of the farmers' institute was marked by the development of the county agent and farm bureau movement. Even the short course, or institute lasting several days and conducted in the nature of a school, was finally merged into the work of the county farm bureau, with practical demonstrations carried on in every section of the county. Instead of a state-wide unit, there was a tendency in later years to develop a county unit.

As in the case of the development of most special lines of activity, there was one man who was particularly responsible for the great development of agricultural extension in Nebraska. In 1911, Charles W. Pugsley, who had been associated with the department of agronomy, became superintendent of agricultural extension, at the same time retaining charge of farm management. In September of that year the name of the department having the extension work in charge was changed from farmers' institute department to agricultural extension department. In 1914
the name of the department was changed to Extension Service of the College of Agriculture and Mr. Pugsley became known as the director. In a comparatively few years this work had grown from a little office in Agricultural Hall to a department covering an entire floor. For about seven years Mr. Pugsley played an important part in the development of this work in Nebraska. He later was assistant secretary of the United States Department of Agriculture and now (1923) is president of the South Dakota Agricultural College.

For several years there had been employed in different sections of the United States what were known as farm demonstrators, or county agricultural agents. These men went about assisting the farmers in developing special lines of work, such as hog cholera eradication, cow testing, improved farm practices, in fact, anything that would make for better farming in the community. In the earlier days one man might cover several counties. These men were first supported by local appropriations, or in many cases by funds supplied by the General Education Board, by corporations, or by banks interested in the improvement of agriculture in certain sections.

The first county in Nebraska to employ such an agent was Merrick County. V. S. Culver began work there in 1912, without any special government or state aid, his support coming from private funds. The real beginning of the county agent movement in Nebraska, however, dates from the passage by the Nebraska Legislature in 1913 of a law, providing for the partial support of such agents by county funds. This law provided that upon a petition signed by at least 10 per cent of the farm land owners in any county in the state, the board might set aside from the county general fund a sum of money to employ or assist in employing such a farm demonstrator. The duties of the county agent were outlined as follows:

"The county farm demonstrator shall work under the direction of the agricultural extension department of the University of Nebraska."
It shall be his duty to co-operate in every way possible with the farmers of the county that the best farm practice for that county may be determined. He shall co-ordinate and apply the results of the work conducted by the United States Department of Agriculture, the various experiment stations and colleges of agriculture and especially the Nebraska Experiment Station and College of Agriculture and also such general studies and farm practices as may be made by him in the course of his work, with the view of carrying to the farmers of the county or community on their own farms, the most successful and productive methods in agriculture. He shall aid in the organization and direction of agriculture in the county where he is employed, and shall co-operate with agricultural clubs and other associations and organizations whose object is the betterment of rural conditions throughout the county. Each farm demonstrator shall devote his entire time to this work and shall be directly responsible to the party in charge of such work in the agricultural extension department of the University of Nebraska."

This law put official sanction on the work of the county agent in Nebraska. About this time other counties began to think about county agents. In 1912 and the early part of 1913 some organization work had been done in Seward and Gage Counties by representatives from the college at Lincoln. A. E. Anderson had been employed on November 1, 1912, to give attention to the organization of county farmers' organizations for the employment of farm demonstrators, or agents. On February 1, 1913, O. H. Liebers was employed as county agent in Gage County. On March 1, Mr. Anderson became county agent in Seward County, securing practical experience for his later work as state leader. On July 1, 1913, A. H. Beckhoff became county agent of Seward County, and Mr. Anderson returned to Lincoln to give his entire time to the extension work. On May 1, 1913, J. F. Coupe became county agent of Thurston County. So we have here the beginnings of the county agent work in four Nebraska counties, Merrick, Gage, Seward and Thurston. No more counties took up the work until 1914. In that year four more county agents began work: Val Kuska in Madison County on March 10, 1914; C. S. Hawk in Dawes County in the spring of 1914; George
O. Unruh in Kimball County on July 1, 1914; and Hugh Raymond in Dakota County in 1914.

By this time the Agricultural Extension Service of the University had begun to receive some money from the Federal government for carrying on its work. The report of Mr. Pugsley, director of the service, showed that there had been received from the United States Department of Agriculture $11,250 in 1914. Of this amount $8,100 went into county agent work, $1,900 into boys' and girls' club work, $500 into dairy work, and $750 into hog cholera work. That year $25,000 in state funds was also available.

But another thing happened about this time that completely changed the complexion of the extension work for all time. That was the passage of the Smith-Lever Act by Congress in 1914. This did for extension work what the Hatch and Adams Acts were doing for experimental work. The Smith-Lever Act stated "that co-operative agricultural extension work shall consist of the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise; and this work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State Agricultural College or colleges receiving the benefits of this act."

This act appropriated $480,000 or $10,000 a year to each state which agreed to the provisions of the act. The act provided further "that there is also appropriated an additional sum of $600,000 for the fiscal year following that in which the foregoing appropriation first becomes available, and for each year thereafter for seven years a sum exceeding by $500,000 the sum appropriated for each preceding year, and for each year thereafter there is permanently appropriated for each year the sum of $4,100,000 in addition to the sum of $480,000 hereinbefore provided."
THE CROWNING YEARS

of this additional money could be available until offset by a state or local appropriation. This extra money was to be distributed to the states "in the proportion which the rural population of each state bears to the total rural population of all the states as determined by the next preceding Federal census." Five thousand dollars of this Smith-Lever money became available to the Nebraska extension service on July 1, 1914. In 1915 the Nebraska Legislature accepted the provisions of the act.

We now have the general background to the extension movement of the last ten or twelve years, including the farmers' institute and the short course, the beginnings of county agent work in Nebraska, and the passage of the Smith-Lever Act by Congress. The extension work was now carried on not alone by the College of Agriculture, but with the active co-operation of the United States government. The assistance of various organizations was enlisted to get the work under way.

"The Extension Service is organized coordinate with the Experiment Station as a part of the College of Agriculture," the report for 1915 stated. "The service itself is divided into departments or divisions with an executive officer in charge of each. At present the divisions comprise the following: County Agents, Boys' and Girls' Clubs, Home Economics, Information Service, Movable Schools, and Special Meetings.

"The Extension Service bears the same relation to the College as does the Experiment Station, and the College is organized as a part of the University. A close co-operative relationship exists between the State Board of Agriculture, the State Horticultural Society, the State Department of Public Instruction, and other State departments and societies, not by law but by agreement. County Associations, known as County Farmers' Associations, taking part in the direction of the County Agent Work, cooperate with the Extension Service, and there are also local Farmers' Institute Associations and other local organizations which cooperate with the Service."
If one turns to the report of the extension service for 1914, one secures a good idea of just how the work was being developed. It might be said that 1914 was the first year in which the work was developed on a really substantial basis. Some twenty-five people were employed for full time, five for part time, and fifteen for special lecture work. This included of course the clerical force as well as those engaged in active outside work.

Mr. Pugsley was serving as director. A. E. Anderson was in charge of the farm demonstration work, or the county agents, as they began to be known a little later. Miss Huldah Peterson was in charge of boys' and girls' club work, Miss Mabel C. Daniels in charge of the home economics work, and Mrs. Emma Reed Davisson in charge of women's club work. An extension council composed of the heads of the various departments in the college was organized to co-operate in directing the work.

There was another development in the work of the extension service. It will be recalled that in the farmers' institute work, it was the custom to recruit a large number of lecturers, part of them from the college faculty and part from among the prominent farmers. Now there began to appear what were shortly to be known as extension specialists. Each man or woman was a specialist in some one line, such as agricultural engineering, or animal husbandry, or dairying, or some other line of farming or home demonstration. These specialists not only went out and filled the institute and short course engagements, but also co-operated with the county agents and carried on demonstrations in various parts of the state. Members of the college faculty in some cases were engaged to give a certain part of their time to extension work. Finally the practice of engaging outside speakers to travel over the state was gradually abandoned.

The demonstration was a favorite method of teaching. That is why the county agents were first known as farm demonstrators. The idea here was to carry on a practical
experiment on some farm and demonstrate, or show, to the rest of the farmers what might be accomplished if every farmer would do likewise. These demonstrations included the prevention of smut by the formaldehyde treatment of seed oats, the value of northern vs. home grown seed potatoes, the proper care of orchards, the vaccination of hogs for cholera, in short, the practical solution of those problems which seemed to be troubling the average farmer. An orchard demonstration in 1914 showed 84.69 per cent of sound fruit from apple trees that had been treated in the demonstration and 10.94 per cent from those that had not. The treatment of seed oats resulted in an increased yield of 250 bushels on twenty acres. Observation tours began to be held occasionally so that the farmers might visit other farms in the county and learn what was being accomplished.

The work in home economics was devoted principally to actual contact with women, either at farmers' institutes or short courses, or at special meetings throughout the state. There was a great deal of work carried on through women's clubs. Such special subjects as canning, cookery demonstrations, and dressmaking began to be taken up.

The boys' and girls' club work was carried on by means of projects. The boy or girl who enrolled as a club member was supposed to carry out during a period of at least one year some project and then make a report. These projects included corn growing, potato growing, gardening and canning, and sewing and cooking. Later on these came to be broadened out into poultry clubs, pig clubs, calf clubs, and other more ambitious undertakings.

The extension service began to issue its own bulletins, while items of interest were sent to the various newspapers throughout the state, the agricultural editor of the college giving approximately half of his time to this work. Another feature was the special excursion trains now and then sent through the state, such as a train promoting dairy work, or seed corn selection. Back in 1912 six special trains were run over nearly all the railroads in the state during the winter
months calling attention to the necessity of seed corn selection if the following year's crop was to be good. It was estimated that 52,000 farmers were reached on that circuit of meetings. There was also correspondence instruction in agriculture thru the University extension department downtown, which had been established a few years before. Exhibits for county fairs were prepared and sent out.

Up to the year 1917, preceding our entrance into the War, the extension work had grown rapidly. In 1916 the extension force consisted of thirty-nine persons employed full time and sixteen part time. That year the various meetings held by the extension service had a total attendance of 205,662. Nine counties, Box Butte, Dakota, Dawes, Kimball, Madison, Seward, Gage, Sheridan, and Thurston, had county agents. Miss Esther Warner in the fall of that year was employed as home demonstration agent in Seward County, the first "woman county agent" in Nebraska, to work especially among the women. Miss Maud Wilson had now succeeded Miss Daniels in charge of the home demonstration work in the state. In 1916 there were four home economics specialists, besides one who devoted her time to work among women's clubs. There were four workers devoting full time to work among the boys and girls. Specialists were now employed in agricultural engineering, animal husbandry, agronomy, dairying, farm management, and horticulture. In 1916 there was $72,645.80 in funds available for work in extension. This included $29,645.80 of Federal Smith-Lever funds, $25,000 of state funds by appropriation, and $18,000, representing contributions by the United States Department of Agriculture.

This was the setting, then, before the United States entered the World War. But soon the extension service was to find its activities being doubled, trebled, and even quadrupled, or better, in some cases. The biggest thing that happened at this time was the passage by Congress in 1917 of the bill for "Stimulating Agriculture and Facilitating the Distribution of Products." This supplied the State
of Nebraska with funds sufficient to place a county agent in nearly every important agricultural county in the state, as well as greatly increase the work for home demonstration and boys' and girls' clubs. There was also during this year more than $93,000 available in Federal Smith-Lever funds, state funds, and apportionments from the United States Department of Agriculture. In July of 1917 but nine county agents were at work. A year later there were fifty county agents, eleven district agents covering two or more counties, three assistant county agents, and ten on the administrative and supervisory force. Ten home demonstration agents at large were appointed. County agent work had come into its own in a way that would not have been thought possible a few years before. From time to time during the War there were special campaigns. At one time thirty-five young women were employed to do special work for a short time under the direction of county and district agricultural agents. There was a special campaign for increased hog production, carried on under direction from Washington.

The big idea was the oft-repeated saying that "Food Will Win the War." So the extension service set about during the war years to promote the growing, the distribution, and the preserving of foodstuffs. Scores of emergency and regular bulletins were issued, all carrying this same gospel in one form or another. When it was apparent that there would be a shortage of cans for canning food products, the extension service evolved a machine for drying fruits and vegetables. Five large machines for communities were put in use in the state. When a shortage of labor became apparent the extension service was instrumental in establishing labor bureaus to furnish men for gathering in the crops. The marketing work was greatly extended, all tending to eliminate as much waste as possible. When it was necessary to cut down on the amount of wheat flour and sugar, the extension service began to distribute recipes economizing on such food commodities. The boys and girls
were urged to greater production of vegetables for the family table. The first boys’ and girls’ club agent to devote his entire time to working among the young people of a county was J. Clarence Hagey, employed in Thayer County in 1917.

During these years there were a number of changes in the personnel of the extension service. C. W. Pugsley, under whose direction the organization had grown to a position of leadership in the state, resigned June 30, 1918, to become editor of The Nebraska Farmer. C. E. Gunnels, who had been called from the position of county agent in Seward County to become state leader of county agents on July 1, 1917, now became director of extension. R. E. Holland succeeded Mr. Gunnels as leader of county agents. Mr. Gunnels was called to a position in Washington, D. C., at the end of 1918, and a few months later he was succeeded by W. H. Brokaw, the present director. L. T. Skinner, who had been serving as assistant to the director since September, 1917, became secretary of the extension service on July 1, 1918.

C. W. Watson succeeded Mr. Skinner in charge of boys’ and girls’ club work, when the latter became assistant to the director of the extension service. Mr. Watson resigned in 1919 and was succeeded by L. I. Frisbie. In the home demonstration work Mrs. Emma R. Davisson succeeded Miss Wilson in 1918. Miss Stella Mather took up the work in 1920, resigned in 1923, and was succeeded by Miss Mary-Ellen Brown.

The extension service at the close of the War found it necessary to retrench in some of its lines of activity. The government’s emergency funds ran out on June 30, 1919, and much of the special war-time work had to be given up. It must be remembered that the Smith-Lever funds were increasing each year, and to compensate for the sudden withdrawal of the emergency funds, some additional Smith-Lever money was made immediately available.
Another way in which the matter was taken care of was by the passage of county agent legislation in 1919. This compelled the county commissioners to make appropriations for this work whenever a sufficient number of farmers requested it. This law provided that whenever in a county not less than 300 farmers, or one-half the farmers in any county, petitioned the county board to appropriate a sum of money out of the county general fund, the board must do so. "Whenever the petitioners shall organize themselves into a society known as a Farm Bureau, and shall have been recognized by the Agricultural Extension Service, College of Agriculture, University of Nebraska, as the Farm Bureau of said county, they shall prepare a budget or estimate of the funds necessary for carrying on of such work within the county," the law stated. "Said budget shall be filed with the County Clerks, and as claims are approved by the Board of Directors of the Farm Bureau and filed with the County Clerk, the County Board shall order warrants to be drawn upon the general fund of said county in payment of such claims. The total amount so appropriated and paid out shall not exceed an amount equal to a one-mill levy on the assessed valuation of the property of the county, and in no instance more than five thousand dollars." 1

The law provided that "the county agricultural agent shall aid in the organization and direction of agriculture in the county where he is employed and shall co-operate with individuals, agricultural clubs, and other associations and organizations, whose object is the betterment of rural conditions throughout the county."

This law was upheld by the courts, but another complication arose. About this time the American Farm Bureau Federation and the Nebraska Farm Bureau Federation

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1 The above law was again modified in the Legislative session of 1923, providing for petitions in proportion to the population of the county. The maximum appropriation of a county was reduced at this time to $3,500. This law also provided that when remonstrance petitions containing the names of one-eighth more farmers than the original petitions were presented, the matter should be decided at the next general election.
began to organize. Had the officers of the College not foreseen the possibility of a conflict between the farm bureau as a public service organization supported by the taxpayers and the farm bureau as a class organization, or society, there might have been severe criticism. The county agents of course were paid from public money and so were supposed to serve every agricultural interest in the county and not any special organization.

Mr. Brokaw, the director of the extension service, pointed out very definitely the work of the county agent in an address delivered at the meetings of Organized Agriculture in 1922. He made clear the following four points:

"1. That the County Extension Agent (or County Agricultural Agent) is supported by public funds, is really a member of the agricultural college staff, and in that degree is a public official.

"2. That this Extension Agent, being a public service official, may not solicit membership for any class organization nor favor in any way one class organization above another.

"3. That the agency within the County which cooperates in directing his efforts is known as a County Farm Bureau and is a public service organization.

"4. That the County Extension Agent as a factor in the advancement of our basic industry in each county, as a member of the agricultural college staff, and as a representative of the federal department of agriculture, must be supported by public funds."

The new farm bureau law providing for county appropriations had done much to make up for the loss of the emergency appropriations. At the end of 1921 there were forty-six organized counties in the state employing county agricultural agents. Eleven of these counties employed two agents. There was in these later years an increasing development of the county unit plan in carrying on extension work almost entirely thru the county agent. Community programs of work were emphasized. Such work as the securing of harvest labor, seed certification, purebred sires, insect and rodent extermination, orchard renovation, better seed potatoes, was promoted. In fact, the modern day county agricultural agent aims to have several special
lines of work under way in his county, as well as offering every farmer such assistance in the solution of special problems as he may desire.

Along the line of home demonstration, there was work in clothing, foods and nutrition, home health and hygiene, home management, home millinery, and the like. Boys' and girls' clubs now included projects embracing wheat, corn, potatoes, garden, pig, sow and litter, dairy calf, cow and calf, beef calf, sheep, poultry, canning, cooking, clothing, and hot lunch. How much the extension service had grown is evident from the fact that its total expenditures for the year ending June 30, 1921, from federal appropriations, state appropriations, and county appropriations amounted to $342,359.57.

THE EXPERIMENT STATION

The marked feature of the work in the Agricultural Experiment Station was the fuller development of the lines of work which had been started during the late nineties and early 1900's. These later years were years of greater intensity, with a better perception of the problems that needed solution. There was now an adequate staff of workers representing practically every branch of agriculture, and one man no longer had to be depended upon to handle everything from teaching to research in several branches and subdivisions of those branches. In addition to the appropriations from the Federal Government in the Hatch and Adams Acts, the experiment station now and then received a substantial appropriation at the hands of the Legislature for general research or for putting into execution some special branch of research.

We have already learned of the North Platte Substation, established in 1903, but now there came a demand for similar stations in other sections of the state. In less than ten years, the Valentine and Scottsbluff substations were established, an experimental fruit farm was started near Union, and additional land for the experiment station at
Lincoln was purchased, not to mention the Culbertson substation which was established at the town of that name in southwestern Nebraska, and later given up. The agronomy farm was added to the central station in 1918.

It is perhaps not an easy matter to pick out all the important work in an experimental way which has been carried on during the last ten or twelve years. Much of the work started during these years is still under way and yet to be reported upon. Experimental work at best is a slow process and especially in the case of observing and developing plants, it often takes several years.

In conjunction with the substations more and more attention had been paid to the problems of the western Nebraska farmer. Here there was investigation as to the possibilities and limitations of cultural practices in overcoming drought. Three outstanding things were here determined: (1) the proper cultivation of the soil to conserve moisture; (2) varieties of crops adapted to the conditions; and (3) the proper rates of seeding. The North Platte substation became a recognized leader in dry land investigations.

In the department of agronomy there was the development of Nebraska No. 60 wheat, which it might be said is the rival of the Kanred wheat from Kansas—only Nebraska did not give its wheat a distinctive name. Today there is the great development of sweet clover thruout Nebraska. Not so many years ago sweet clover was thought to be a weed, but today it promises to be a crop as valuable to the raiser of livestock and the general farmer, as alfalfa hay is to the feeder. Nebraska of course cannot compete with the East in bluegrass pastures, but here is a pasture crop that will maintain three times as many animals per acre.

In horticulture one of the biggest accomplishments of recent years was carried out. For many years the majority of farmers in northwest Nebraska were under the impression that they should import their seed potatoes. But the college proved to them not only that this was unnece-
sary but that they could grow seed potatoes themselves which would actually eclipse those grown in some of the best seed-producing states. The college developed the growing of certified seed potatoes for the southern market, and the grower in northwest Nebraska who takes extra care and has his potatoes certified can receive 50 to 75 cents a hundredweight extra for his crop. Over in the irrigated districts the college proved to growers that irrigated seed generally runs out, and in many cases after a few generations is worthless. This has been demonstrated to be due to a disease — spindle tuber. It was suggested that these growers could buy dry land seed from their neighbors a short distance away. Even on a poor market, 1923, those who applied these two ideas made over $100,000 clear profit over what they could have done had they followed their old plans. Of course it must be understood that many accomplishments such as this are carried on in cooperation with the Agricultural Extension Service.

Then there is the work in agricultural engineering. With the erection of the new building for agricultural engineering, equipment for testing agricultural implements was installed. The piece of work of the most original and far-reaching character has been the testing of tractors. The Legislature in 1919 passed a law compelling manufacturers of tractors sold in the state to have them tested by the college to see if they measured up to the specifications as given in the companies’ advertisements. A special track was constructed for this work and a small building erected to carry on some of the special tests. It is interesting to note that as a result of the testing of sixty-eight tractors in 1920, manufacturers of six tractors increased their engine speed, manufacturers of eleven lowered their horsepower rating, eleven made changes in their equipment, and three withdrew from the tests. A great deal has been accomplished in cooperation with the Agricultural Extension Service in solving practical problems, such as drainage and prevention of soil erosion on the average farm.
For the first time, perhaps, people began to think seriously about system on the farm. The department of farm management, later rural economics, found a fruitful field for labor here. Farming was no longer a hit-or-miss proposition, but a business that demanded as careful study as any other business. So the college has begun experiments to find out why farmers do not make money, and to develop scientific plans of handling individual crops and farms to make as substantial profits as possible.

Probably the outstanding result of the experimental feeding work with animals during this period was the renewed emphasis placed on the use of corn and alfalfa as the ideal fattening ration. The “fancy” feeds, as well as the substitution of millet, timothy, and prairie hay for alfalfa, did not give as good results. It was found that in fattening lambs four pounds of corn and three pounds of alfalfa were necessary to produce one pound of gain, in fattening calves from five to six pounds of corn and two pounds of alfalfa, in fattening two and three-year-old steers eight pounds of corn and five pounds of alfalfa, while in fattening pigs, five pounds of corn and one pound of alfalfa were necessary to produce one pound of gain. The work has tended to show that in the case of calves, lambs, and pigs about ten pounds of gain may be secured from one bushel of corn.

Another important fact may be deduced from the figures given above. Calves make as much gain on 60 pounds of feed as older cattle do on 100 pounds. This fact lies at the foundation of the “baby beef” work. The corn belt feeder will do well to feed more calves, thereby producing greater gains at less cost. Western stock raisers may well afford to raise more calves to turn over for fattening to the corn belt feeder. The markets have shown an increasing demand for young beef.

The dairy work of the college prospered greatly during these years, added impetus being given by the erection of the new dairy building in 1916-17. In 1923 the college had
approximately forty-two cows in milk of all breeds with an average production per cow of about 12,134 pounds of milk, 494 pounds of fat, or 617 pounds of butter. Nebraska's great record has been made with Holsteins. Figures compiled a year before and published in the Journal of Dairy Science showed Nebraska holding first place among mature Holsteins, second place among the junior four-year-olds, second place among the senior three-year-olds, fifth place in the junior three-year-old class, fourth place in the senior two-year-old class, and second place in the junior two-year-old class. This was out of a total of twenty-four colleges and universities. On the honor roll of the Holstein-Friesian Association for 1922-23, the herd of the Agricultural College stood at the top among all the agricultural colleges of the country.

The foundation of the dairy department went back to two cows, Karen II, mother of Katy Gerben, and La May, the mother of La Verna Lincoln. Neither of these cows cost more than $50. Karen II was purchased by Prof. A. L. Haecker, of whom we have previously read, in the late nineties. Katy Gerben, her offspring, was to have a remarkable influence in Holstein history. At two years of age Katy produced 338 pounds of butterfat, and the next year broke the World's record as a three-year-old, producing 18,573 pounds of milk and 620 pounds of fat. During her twenty years of service to the institution Katy gave birth to fourteen calves, of which nine were bulls and five heifers. She outlived all of her daughters except one. During fourteen lactation periods she produced 166,456 pounds of milk, this despite the fact that during later years the front quarters of her udder gave no milk.

Kittie Gerben Lincoln was Katy's outstanding daughter, as far as perpetuating the family line. Kittie gave birth to a son, King Derby Lincoln, who has nine high-producing daughters and eight granddaughters in the herd. His nine daughters averaged, at four years, five months of age, 710 pounds of fat. There are forty-two descendants of Katy Gerben in the University herd.
La May, the other famous cow, was purchased in 1909 with a lot of run-down cattle, the entire herd being bought for $38 a head. The daughter of La May was La Verna Lincoln, who brought to the University of Nebraska at one time the distinction of being the only college which had bred, raised, and owned a cow producing more than 1,000 pounds of butterfat in a year.

Then there was the manufacture and distribution of hog cholera serum, carried on by the College of Agriculture. In 1911 the Legislature established a plant for the production and distribution of hog cholera serum under the direction of the regents of the University. The Legislature of 1917 discontinued the appropriation, but the Legislature of 1919 provided funds to reopen the plant. Today most of the serum is purchased and tested by the station and then shipped out to the farmers.

The work in the investigation of animal diseases, which was such a prolific source of inquiry and almost the first important investigational work carried on by the college, was resumed a few years ago. The new laboratory provided for animal pathology makes possible such work on an ambitious scale.

For the first time the college was now able to pay some attention to the scientific aspects of poultry raising, with the establishment of an adequate poultry plant. Nearly every farmer raised some poultry, but there was always much to be desired in the way of investigation and extension work along this line. A great deal has been accomplished in co-operation with agricultural extension in developing, on the average farm, high-producing flocks of poultry.

It would be quite possible to enumerate many other lines of work that the College has under way. There are always plenty of practical experiments, in which immediate results may be looked for. Then there are many of a highly scientific character, such as those carried on in animal pathology. The man who writes the next ten years of this
history will doubtless be able to recount the results achieved in the various undertakings going on at the present time.

NEW SUBSTATIONS

From the passage of the Kinkaid Act in 1904, and in fact, during practically the entire first decade of the 1900's, there had been a steady influx of settlers into western Nebraska. The homestead lands began to be picked over, and soon the western half of the state was dotted with sod houses of the homesteaders. The land north of the Platte began to be settled. Irrigation played an increasingly important part in the North Platte Valley, and in other sections of western Nebraska. With the advent of the homesteader with his small farm or ranch, seldom over 640 acres, there came a demand for information as to how to make a living. Western Nebraska was now face to face with the problem of making the small farm or ranch pay its way. The sand hills were unusually important of course, covering some 20,000 square miles, or about one-fourth the area of the state.

"The obvious usefulness of the North Platte Station no doubt lies at the basis of the call for a similar enterprise in another but a very different section of the state, the so-called Sand Hills region," the regents' report for the two years ending in 1908 stated. "The station at Lincoln practically covers the ground for the eastern and central parts of the state, that is to say, for the glaciated portion and for the loess plains. The substation at North Platte does the work for the elevated plateau. The sand hills naturally come next. Their agricultural and stock-raising possibilities are thru under-development vastly under-estimated."

The Legislature in 1909 made provision for two substations. One bill, passed by the Legislature, provided "that for the furtherance and promotion of agricultural, horticultural, forestry, and livestock interests of this state,
an experimental sub-station shall be established north of
the sixth standard parallel and west of the second guide
meridian in the State of Nebraska, including the counties of
Sioux, Dawes, Box Butte, Sheridan, Cherry, Keya Paha,
Brown, and Rock, which station shall be under the control
and management of the board of regents of the state uni-
versity."

Another bill passed by the same Legislature provided
for an experimental substation "west of the one hundred
and second meridian in Nebraska." The regents of the
University were authorized to select the necessary lands
for the first station, and in the case of the second station,
they were authorized "to take such steps in conjunction
with the authorities of the United States as they deem
necessary to successfully establish such station." Fifteen
thousand dollars was appropriated from the temporary
university fund for the first station and $5,000 for the
second station.

The sandhill station was located by a committee of
regents at Valentine, while the other station was located
near Mitchell, in co-operation with the government, and
became known as the Scottsbluff Substation.

The Valentine station, according to the report of the
Board of Regents for the two years ending in 1910, in-
cluded "40 acres of deeded land adjoining the town,
together with about 1,050 acres of land from the military
reservation, which is to remain under easement from the
government, in the possession of the University as long as
it is used for experimental purposes. A substantial house
built of cement blocks and a barn of the same material are
in process of construction. This material was selected in
part with an endeavor to demonstrate the feasibility and
economy of concrete construction in the sand hills region
of the state."

By an act of Congress the University had been granted
a perpetual lease by the War Department to 1,093 acres of
the old Fort Niobrara Military Reservation, while the
town of Valentine voted the other forty acres to the University. The land comprising the Fort Niobrara Military Reservation passed from the control of the War Department to the Department of Interior about 1914, and most of it was thrown open to settlement. The land occupied by the substation was reserved and tendered to the Board of Regents at the nominal price of $1.25 an acre, and it was purchased by the Board of Regents.

The site for the station "west of the one hundred and second meridian" was recommended by a committee of the United States Department of Agriculture, which was to have the station in charge in co-operation with the University of Nebraska. This station was to be located five miles east of the town of Mitchell and seven and one-half miles northwest of the town of Scottsbluff. The regents agreed to this site, and 160 acres of land were set aside.

The station in Nebraska was to be one of several such experiment or demonstration farms which were to be established on reclamation projects in the United States that were subject to homestead entry. There was some difficulty in securing the money which had been promised by the Department of Interior for the buildings to be erected at this station, but finally on March 7, 1910, Secretary R. A. Ballinger approved the use of $5,000 for erecting buildings on the land which had been set aside by the Reclamation Service. On March 15, a memorandum of co-operation was signed between the experiment station and the bureau of plant industry of the United States Department of Agriculture. Fritz Knorr was appointed superintendent by the bureau of plant industry and his appointment was approved by the University.

Both of these new substations were now ready for work. At the Valentine station it was determined to give a trial to alfalfa, corn, sorghums, and all grasses which held any promise for the sand hills. It was also proposed to establish a dairy farm and to try out timber cultivation. A good idea of what this station was accomplishing is found in
Bulletin No. 156, *Farming Practice in the Sand Hills of Nebraska*, by James Cowan, who had been appointed superintendent of the farm on March 1, 1910.

Experiments showed that alfalfa would do well, especially where there was subirrigation. Potatoes gave every promise of becoming an important crop, when people gave more attention to the details of their growing and marketing. Corn and small grains did quite well, under the right conditions. It was found that trees could be made to grow in favored localities with the selection of the proper varieties and with a little care in handling them. James Cowan resigned as superintendent of the Valentine station in 1919 and E. M. Brouse was appointed to the position.

The work at the Scottsbluff station, carried on in cooperation with the United States Department of Agriculture and to some extent with the Reclamation Service, was primarily an investigation of the possibilities of growing crops on the irrigated land in that district. The law originally passed by the Legislature evidently did not contemplate investigations along the line of livestock, altho some feeding experiments have been carried on from time to time, especially in handling by-products of the sugar beet in feeding. The station has been a more or less practical aid and demonstration farm for those who have taken up irrigated land along the North Platte river.

Experiments have been conducted on both irrigated and dry land at this station. Crops which have been grown include sugar beets, alfalfa, potatoes, small grain, and forage crops. A small herd of dairy cattle was established at the farm to encourage dairying in this section. Experiments have been carried on with hog and sheep feeding. The proper rotation of crops on both dry land and irrigated land in that section has been an important part of the work of the station. Fritz Knorr resigned as superintendent of this station January 1, 1917, and James A. Holden was appointed to succeed him. In 1917, 800 acres of dry land adjacent to the station was procured by the University to be used experimentally.
The successful establishment of three substations for the college led to the establishment of still another, the Culbertson substation. The Legislature made provision in 1911 for its establishment with an appropriation of $15,000. The regents purchased a farm of 160 acres adjoining that town. "The larger portion of the appropriation has been expended in purchasing the site and acquiring the buildings and equipment necessary to the substation work; but the substation is now ready to begin work at the opening of the next crop season," the report of the Board of Regents for the two years ending in 1912 stated. The regents at that time suggested that the state was now sufficiently well equipped with substations and that it would be advisable to spend the money on those stations already in existence. The Culbertson station, however, was short-lived. The Legislature of 1915 ordered the land sold, the University giving possession of the farm on March 1, 1916.

The Legislature in 1917 made an appropriation of $32,000 for the purchase of an agronomy farm and an appropriation of $10,000 for the purchase of land to be developed into a model fruit farm. The agronomy farm of 160 acres, costing $36,000, was located one and one-half miles east and one mile north of the present farm campus, being really a supplementary tract of land to the central experiment station. The fruit farm was located on eighty acres of land near Union, in Cass County. Forty acres of fruit was immediately set out on this farm in 1918.

Dean E. A. Burnett of the college remained as director of the station throughout this period. Prof. W. W. Burr is now assistant director.

**HONORARY RECOGNITION**

One of the features of the last few years has been the recognition by the College of Agriculture of men "who have made notable contributions to the betterment of agriculture and rural life in Nebraska." This has been done by conferring certificates of honorary recognition upon
such individuals. Those who have received the honor include Samuel Clay Bassett, William Gunn Whitmore, Charles H. Morrill, George W. Holdrege, Fred W. Chase, Col. F. M. Woods, Samuel McKelvie, and Edward Provost Brown.

FINANCES

The college and experiment station farm in Lincoln was valued in 1922 at $401,200, exclusive of buildings. This shows perhaps, even financially, the value of the work done in promoting agricultural education in the seventies. The permanent endowment funds of the University, derived from the sale of its lands, had reached a total of $900,523.30 by the year 1922. At this time there were 7,156.29 acres of land unsold from the Land Grant of 1862, and 12,135.13 acres of land remaining from the land granted in 1864 under the enabling act of Congress.

The important feature of the latter part of this period was the abolition of the one-mill levy for the University, and instead the adoption of a general budget for the entire state government. It was in 1919 that the Civil Administrative Code was passed, and after that time the various branches of the state government were required to prepare budgets for their needs during each succeeding biennium. In 1917 a state activities fund had been created in which appropriations for the miscellaneous activities of the University were included, such as agricultural extension, the experiment station, substations, etc. This, however, was done away with under the new budget plan. The principal facts relating to the financing of the various developments in the college have already been noted and they need not be referred to again here.
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