

THE NORTHWEST MONTHLY



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NO. 9.

Northwest School Opens September 30 Thirtieth Freshmen Class to Enter This Fall

The Northwest School, which first opened its doors to the young people of Northwestern Minnesota in 1906, will welcome its 30th freshman class on registration day, September 30. During this 30-year period over 1100 young men and women have graduated while over 4000 have been in attendance one or more years. It has been estimated that approximately 85% of the graduates have returned to the farm as farmers and home makers. The influence of the school through its students and experiment station has therefore spread to every township in the fourteen northwestern Minnesota counties. Graduates and former students are rapidly assuming positions of leadership and hence exerting a profound influence on the agricultural development of this territory.

Attendance has increased from 31 students in 1906 and 1907 to between 300 and 400 during recent years. Based upon room reservations made to date, and letters of inquiry that are coming in from all parts of the Valley, another successful year is in prospect.

Dormitory Supervision

Parents appreciate the home-like supervision of the dormitories of which there are two for boys and one for girls. Members of the faculty live in the dormitories and hence supervise student

activities at all times. Year after year parents have mentioned this as one of the most important features of the school.

Entertainment Program

Throughout the year students are provided with a wholesome entertainment program supervised by a faculty committee in cooperation with representatives of the various classes. This

Sound Picture Equipment Installed

Upon returning to the Northwest School this fall former students will find that modern sound picture equipment has been installed, thus insuring a series of most interesting as well as instructive pictures throughout the school year. The installation included

complete Deluxe Ultra-phonograph Jewell Wide Range-on-Film equipment with two Simplex projectors and new alternating current high intensity art control lamps with transformers, together with tubes, exciter lamps, and a 16x14 regulation sound screen.

The new equipment was initiated during the 4-H club short course early in June and created much interest on the part of students, faculty

and campus children. The school auditorium, which is considered one of the most beautiful in the Northwest, is now fully equipped for all types of entertainment. The new sound picture equipment will add much to the success of the coming school year.

scouts, public speaking, and dramatics.

Since the students are provided dormitory and dining hall accommodation on the campus this leads to the development of school spirit and loyalty

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The Mixed Chorus is one of the leading school organizations

program includes dramatics, lyceum numbers, motion pictures, dances and parties, athletics, contests and debates. Such a program avoids the necessity of students leaving the campus for the necessary entertainment.

School Activities

Students are encouraged to take part in one or more of the many worth while extra curricular activities. These include debate, livestock judging, crops judging, football, basketball, track, orchestra, glee clubs and choruses, Y. M. C. A. and Y. W. C. A., 4-H club, boy

THE NORTHWEST MONTHLY

Issued Monthly by
THE UNIVERSITY OF MINNESOTA
NORTHWEST SCHOOL OF
AGRICULTURE
A. A. DOWELL, Superintendent

OFFICE
Northwest Experiment Station,
Crookston, Minnesota.

A monthly publication in the interest of
agricultural education and home training for
Northwestern Minnesota.

NORTHWEST SCHOOL OPENS SEPT. 30

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together with the formation of lifelong friendships with other young people from all parts of the Red River Valley.

Who May Attend

Any boy or girl who has completed the 8th grade or who is 16 years of age or over is eligible to attend. Students who have attended high school for one or more years may transfer to the Northwest School and all credits earned in high school will apply towards credits required for graduation. Upon completion of the 3 years of 6 months each, together with the required home project work, students are graduated from the regular 3-year course in agriculture and home economics. Those who wish to continue their education may return for a fourth or college preparatory year of six months, following which they are eligible to enter any college or university in Minnesota. The six months school year has been found to be the most desirable arrangement, particularly for farm boys and girls. As the winter term closes the last of March the young people are available to assist with farm and home work throughout the crop growing season.

An increasing number of high school graduates are enrolling for special training in agriculture, home economics, music, and business. Such students are allowed to elect those courses which will prove to be most valuable in connection with their future work.

Expenses

As this is a state school the cost of board, room, and necessary fees is kept at a minimum. The entire cost for the full six months need not exceed \$135 per student. The only expenses to students who are eligible for state aid is for board and room, which amount to \$19 per month. All who are interested should write the Northwest School for further information.

Changes in addresses: Milton Warner '20, 809 Baker Ave., Mankato; Violet Solmonson '32, 4825 France Ave. S., Minneapolis; Arthur Burk '31, Reforestation camp, Disautel, Washington; Melvin Burk '28, 1010 16th St., San Diego, Calif.; Chris Holte '32, Fort Berthold Indian reservation farm, Elbowoods, North Dakota; Mrs. Leo Laurin (Bertha Larson '19-20), Argyle; Leland Lincoln '21, 555 Pecor St., Oconto, Wis.; Grant Bothum, manager Hartz store, Kennedy.

McGENTY RESIGNS TEACHING POST

D. C. McGenty, debate coach and instructor of Advanced subjects at the Northwest School for the past four years, has resigned to continue his work towards the doctorate at the University of Minnesota. His record as debate coach at the school merited the highest praise from students and faculty. During his first year as coach Northwest School teams won a unanimous championship. In 1932 the Central School, St. Paul, won the championship but the Northwest School tied them in points. In 1933 the local Aggies tied the other schools in points and debates for a three-cornered championship. In 1934 the Northwest School won the state award in debate and total number of points. This year the affirmative team defeated St. Paul negative speakers by a score of 3-0. At Morris our negative lost by a close 2-1 decision. As St. Paul debated Morris 3-0 the Northwest School again won the state championship on points.



D. C. McGenty

Mr. McGenty was granted a Masters degree at the University this spring and is now working towards a Doctorate, which he expects to complete in the near future.

STAFF HONORS MR. AND MRS. A. M. FOKER

Members of the Northwest School and Station staff staged a surprise party honoring Professor and Mrs. A. M. Foker, whose silver wedding anniversary occurred early in June. Promptly at six p. m., a procession of cars drove down Cottage Row with clarions sounding, stopping in front of the Foker residence. The latter were ushered into the waiting school bus and transported to the parlors of Senior hall where they were met by a flower girl in the person of J. W. Mlinar, assisted by David Pilkey, and entered the building to the strains of Lohengrin's "Wedding March," which was played by campus children including Jean and Margaret Dunham, Loren Kiser and Robert Sunderland.

The surprised guests were then ushered into the presence of Judge O. M. Kiser, who reached the verdict that since the first twenty-five years had been passed in comparative peace, it appeared that marital relations could be safely continued. All members of the party then sat down to a typical picnic supper around the parlor fire place. Following the supper, Mr. and Mrs. Foker were presented with an attractive silver coffee pot as an expression of appreciation of all members of the group.

ANIMAL HUSBANDRY AND POULTRY WORK SUMMARIZED

The July Northwest Monthly carried a condensed statement summarizing the investigational work of the Agronomy and Horticultural Departments during the forty-year period since the Station was established. In this issue we are pleased to present a brief summary of the work of two other important departments — Animal Husbandry and Poultry.

ANIMAL HUSBANDRY

Fattening Beef Cattle. A total of 336 beef cattle were used in feeding trials conducted at this station during the period 1922-33. Of this number there were 24 two-year-old steers, 56 yearlings, and 256 baby beef calves. With the exception of three pasture trials, all groups were fed in the dry lot. Emphasis has been placed on the comparative feeding value of roughages and concentrates common to the Red River Valley region.

Sweet Clover Hay. As a roughage for wintering yearling steers, sweet clover hay was found to be equal to alfalfa, when these roughages were fed with corn silage and oat straw. In another trial of 196 days, a group of yearling steers receiving sweet clover hay and oat straw made an average daily gain of .89 pounds compared with .64 for a similar group receiving prairie hay and oat straw. With sweet clover and prairie hay valued at the same price per ton, there was, however, little difference in the cost of gains. Two-year-old steers receiving sweet clover hay with a fattening ration of ground barley, linseed oilmeal and corn silage made an average daily gain of 2.83 pounds during a 112 day feeding period compared with an average daily gain of 3.08 pounds in a lot receiving alfalfa hay with the same fattening ration.

Grains for Fattening Beef Cattle. Baby beef calves fed ground barley, alfalfa hay and oilmeal made an average daily gain of 2.2 pounds per head compared with an average daily gain of 2.3 pounds where shelled corn replaced the ground barley. From the standpoint of the amount of feed required to produce a unit of gain, the barley was equal to shelled corn. Ground barley was thus found to be a satisfactory fattening grain and can be used to replace corn in regions where the latter cannot be grown to advantage.

Substituting oats for an equal weight of barley lowered the rate of gain, increased the feed requirement, added to the cost of gains, and produced a less desirable market finish. In one trial, the barley fed calves were valued at \$1.00 per hundredweight higher than a similar lot of calves fed on oats. Only when oats are considerably cheaper per pound than barley should oats be used to replace part of the barley in the ration.

Wheat was used in two different trials and was found to be equal to barley in rations for fattening baby calves. The desirability of replacing barley with

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Station Celebrates Fortieth Anniversary

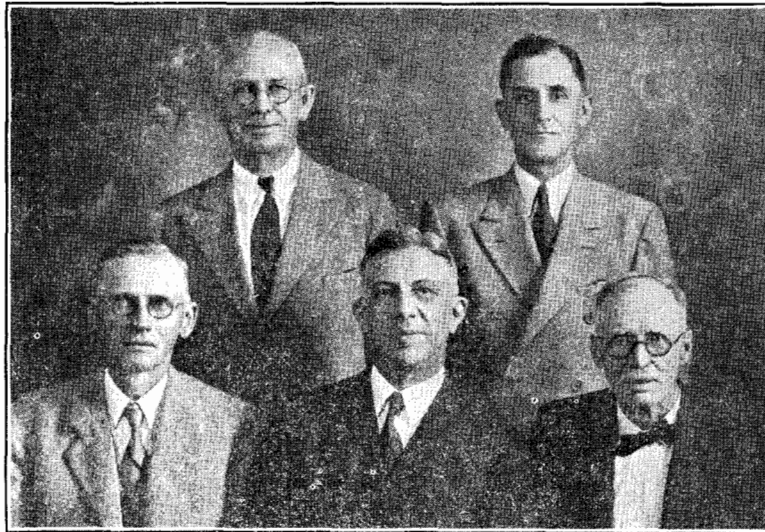
An impressive program marking the fortieth anniversary of the establishment of the Northwest Experiment Station was held on the school campus Monday, July 15. Three men who contributed much to the growth and development of the school and station appeared on the program and reviewed early days. T. A. Hoverstad, the first superintendent, told of his first impressions when he entered upon his duties on July 1, 1895. At that time the poorly drained farm gave little promise of its later development. During the celebration, Mr. Hoverstad again walked over the grounds, locating old landmarks and taking pictures indicating the great change that had taken place. He said that the Northwest School campus was one of the most beautiful in the entire Northwest, and that the institution had grown far beyond his early expectations.

Former Senator A. D. Stephens, a lifelong friend and supporter of the school, briefly summarized the growth under each of the four superintendents. He referred to the fine contribution made by Wm. Robertson, superintendent from 1905 to 1910, who organized the school of agriculture, supervised the drainage of the farm, and aided in securing appropriations for many of the present school buildings. Mr. Robertson died in the service of the school in 1910. He was succeeded by C. G. Selvig, whose energy resulted in an expanded research program, enlarged school, and valleywide organization. Upon Mr. Selvig's election to Congress he was succeeded by A. A. Dowell in 1927. Mr. Stephens said that when he was urging the establishment of the school in 1905 Governor Rice asked whether it would pay. At that time it was difficult to answer such a question. Now it can be definitely answered in the affirmative. Mr. Stephens mentioned a typical Valley township where he said the productivity and value of the land had been increased at least fifty percent as a result of the training received at the Northwest School by many of the present farmers, together with the practical application of information made available by the Experiment Station.

C. G. Selvig, superintendent from 1910 to 1927, said that Minnesota had the best organized system of agricultural education in the United States. He

summarized the developments which took place during his period of service and referred to the achievements of the school's graduates. The spirit of co-operation which prevails throughout the valley is due in large part to the influence of the school and station. Mr. Selvig was responsible for the organization of the Red River Valley Winter Shows, which have attracted national attention.

In introducing the honored guests, Superintendent A. A. Dowell said the station was honored by the presence of these men who had contributed so much to its growth. They had watched the school grow from 31 students in 1903 to 300 to 400 during the recent



Seated, left to right: T. A. Hoverstad, superintendent of Station 1895-1905; C. G. Selvig, superintendent of School and Station, 1910-1927; and A. D. Stephens, former state Senator who aided in securing needed appropriations during early period of development. Standing, from left to right: W. C. Coffey, Dean and Director of the University Department of Agriculture, and A. A. Dowell, superintendent of the School and Station since 1927.

years. The graduates now total over 1100, with an additional 4000 who have attended one or more terms.

The principal address of the day was delivered by Dean W. C. Coffey who spoke of the work of agricultural experiment stations. He summarized some of the outstanding contributions that had been made since the Northwest Station was established forty years ago and indicated a number of problems that are pressing for solution at this time. He emphasized the fact that new conditions create new problems and that the task of the experiment stations is to aid in their solution. He mentioned the need for land use planning, the conservation of soil fertility, more scientific methods of improving livestock, and the possibility of utilizing agricultural products for industrial purposes.

The day's program included an inspection of the station herds and flocks

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EDITORS COMMENT ON FORTIETH ANNIVERSARY

The Fortieth Anniversary celebration of the establishment of the Northwest Experiment Station resulted in many congratulatory statements on the part of newspaper editors throughout the Red River Valley.

The following statement featured the July 15 issue of the Crookston Daily Times:

Forty Years of Farm Service

"The Northwest School and Experiment Station, popularly termed 'the farm school', today is celebrating the 40th anniversary of its founding. During the past forty years this nation has probably passed through the greatest metamorphosis in history. In the same period the same changes have reached the Red River Valley, served the past four decades by the Northwest School.

Without a doubt no institution nor organization has served this field with greater benefit than the Northwest School. Its intangible results are many. Its tangible results can be counted in the millions of dollars it has meant to farmers who may today count the blessings of diversification, pure seed grain, pure bred cattle, disease-resisting crops and livable farm communities.

Farmers thought little of the Experiment Station, as it was originally called, when it was first established 40

years ago. The claim was made that James J. Hill, founder of the Great Northern Railway, donated the swamp land for the school's site to avoid paying taxes on unprofitable land. But such a claim was absolutely unfounded. Crookston citizens asked Mr. Hill to donate the land and the request was promptly granted. And from a swamp in a barren prairie 40 years ago the Northwest School has grown into the foremost beauty spot of the valley.

One main factor is involved in the gigantic success of the school. That is the high type of superintendents the school has had. From Mr. Hoverstad, in charge through the lean years of starting; through Dr. Robertson, during the early transformation period; Mr. Selvig during the great war years, and Dr. Dowell through the depression, the school has been fortunate in having leaders capable of long range planning.

The school's policy is not to try to

tell farmers how to farm, but to provide them with the knowledge of what kind of farming is profitable. Today's prospective bumper wheat crop probably would be reduced to a total failure from rust if the efforts of the Northwest School had not produced a rust-resistant variety of wheat capable of withstanding the scourge.

Along with the school's success in improving the strains of grain, stock, poultry and corn; its community work such as the Red River Valley Winter Shows, short courses, picnics and women's meetings; its diversification and organization work, one other important function should be mentioned. That is the success it has had in returning its alumni to the farm. Every community in the valley is profiting by better farming methods as each year's graduating class returns to the homestead prepared to carry on the gospel of good farming first started here 40 years ago.

Along with the soil and weather conditions, there should be included the Northwest School as one of the reasons the Red River Valley has never had a crop failure."

The Weekly Record, East Grand Forks, July 19 issue, carried the following statement:

40 Years of Service

"Forty years of service to agriculture in Northwestern Minnesota were marked at fitting exercises held Monday at the Northwest Experiment Station, Crookston.

Not only has the work of staff members of the station been of benefit in this section but the findings and discoveries have been made available to farmers throughout the state and nation. The cause of better farming has been greatly advanced throughout the 40 years that the station has been in existence. Later it supplemented the training offered to farm youth by the Northwest School of Agriculture.

Anniversaries are usually remembered and observed more because of sentiment than any significance which attaches to the event. In the case of the experiment station, however, the condition is different. Forty years is a comparatively short period to science—and the work of the station is truly scientific. The station is just entering its period of greatest usefulness and hence the anniversary observed Monday is significant.

The institution now has the background and prestige to enable it to accomplish even more important work. It is in the full flush of youth, not the twilight of age and the 40 years which will succeed the 40 just completed will undoubtedly bring greater progress than the founders ever dreamed or even deemed possible."

STATION CELEBRATES 40TH ANNIVERSARY

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under the direction of O. M. Kiser, R. J. Christgau, and A. M. Pilkey, and a tour of the experimental plots under the leadership of R. S. Dunham, T. M. McCall, and E. R. Clark. Miss Retta Bede supervised a special program for

the women, while Coach Christgau conducted the boys and girls on a tour of the school buildings.

The Red River Valley Crops and Soils association held its annual meeting during the day. Herman Skyberg, Fisher, was re-elected president with Theodore Mellum, Ulen, vice-president; R. S. Dunham, Crookston, secretary; S. M. Sivertson, Crookston, treasurer. County directors included the following: Kittson, A. V. Hunt, Hallock; Roseau, Lenus Landby, Warroad; Marshall, Alfred Hvidsten, Stephen; Pennington, Simon Brieland, Hazel; Red Lake, Maurice Lillo, Oklee; Clearwater, Elmer O. Anderson, Clearbrook; West Polk, Anchor Worden, Fisher; East Polk, Melvin Flakerud, Fosston; Norman, Roy Boman, Twin Valley; Becker, Fordyce Larson, Ulen; Clay, Hans Johnson, Rollag; Wilkin, Wm. Fredrichs, Foxhome; West Ottertail, Albert Knutson, Pelican Rapids; East Ottertail, W. H. Frey, Perham.

EARLY DAYS

From Address by T. A. Hoverstad—Station Fortieth Anniversary Celebration

"Upon reaching the campus this morning, I walked over some of the once familiar ground and was struck with the remarkable change that has taken place since I first viewed the station farm when I walked over the swampy land July 1, 1895. Naturally deep emotion stirred within me. Without exaggeration I can say that the campus is one of the most beautiful in the Northwest. It has grown far beyond the dreams of those of us who were here during the early days.

"I wish to pay special tribute to some of the early pioneers who did so much for the young struggling institution. Included in this group were Professor W. M. Hays of the Central Station who visioned an experiment station here near the particular problems of the Red River Valley; James J. Hill, president of the Great Northern railroad, who gave the land to the University Board of Regents; P. L. Ringdal, who was state senator when the station was founded and aided in passing the bill establishing the institution; Col. R. A. Wilkinson, who was always a supporter of the station; and former Senator A. D. Stephens, who aided in the establishment of the School and in securing needed appropriations.

"I hope to be able to return for the fiftieth anniversary celebration ten years hence. The School and Station have done much in promoting the agricultural development of the Red River Valley."

LATER DEVELOPMENTS

From Address by C. G. Selvig—Fortieth Anniversary Station Celebration

"In 1910 there was very little alfalfa and almost no sweet clover in northwestern Minnesota. In the varietal tests of alfalfa begun by Superintendent William Robertson in 1908, Minnesota grown Grimm's alfalfa ranked first, followed closely by South Dakota grown Grimm alfalfa. With A. D. Stephens' financial cooperation, we purchased a

carload of this South Dakota seed and distributed it to 642 farmers who had decided to try a little alfalfa. It was purchased by them in lots of from ten to one hundred pounds. With the seed went instructions regarding planting and care. It was sold for twenty cents a pound. The original cost at the South Dakota shipping point, as I recall it, was fifteen cents a pound. When the books were closed and all expenses for handling had been included, a refund of 2½ cents a pound was sent to each of the 642. Many of the cooperators said it was the first time they'd ever had the experience of getting any money back.

"The alfalfa seed grew. Reports received during the next two and three years showed 98½ per cent succeeded. Since then alfalfa has won and retained a stable place in the agricultural practices in the Red River Valley.

"The Northwest Station early was concerned with the huge toll taken annually by the black stem rust of wheat. A nationwide campaign for the federal government to assist in eradicating the common barberray was given strong impetus at a meeting held in Crookston. This was followed by a delegation being sent to Washington to enlist the support of the United States Department of Agriculture and Congress.

"A major project at this station has been the production and distribution to farmers of purebred seed grain and hardy varieties of seed corn. This work was begun about twenty years ago and increased in volume and importance. Thousands of farmers have benefited greatly by procuring their pure seed stocks from the Northwest Station. Varietal tests in rows and plots carried on by the agronomy department, followed by field trials, brought out the varieties peculiarly adapted to this farm.

"The horticultural department carried on similar work in connection with the planting of trees, shrubbery and fruits. It also conducted farmers' tests with potatoes and sugar beets which were productive of successful results.

"Purebred stock from station herds and flocks has been widely distributed. Eggs from trapnested pedigreed hens and breeding birds sold by the station have assisted in improving the poultry flocks in northern Minnesota.

"The Northwest School Farmers' Week and women's meetings were begun in 1910 and were for some years held at the station. On account of lack of transportation facilities, the week's activities were transferred to Crookston. They were held, excepting in 1910, during the second week in February. The purpose was to provide a forum for the presentation and discussion of farm, home and community problems common to the Red River Valley. The meetings were called a 'short course' in 1910. A farm crops exhibit was held in connection with the short course. This feature has continued through the years.

"At the evening meetings, national leaders of thought and action came to deliver inspirational and educational

messages. During the day, meetings were held dealing with current farm problems. The week proved successful from the beginning. Outstanding speakers were secured year after year. Throughout the seventeen years of my administration, the closest and most helpful cooperation was given to this and to all Northwest Station activities by the Dean and Director of the Central Station and the state extension service. Without this fine cooperation, these winter meetings and shows could not have attained the scope and influence that came with the years. They entailed much extra work for the Northwest School and Station staff—and a heavy responsibility as well—but year after year the members of the faculty loyally did their part and had the satisfaction of seeing success crown their efforts.

"Women's meetings early became a part of the Red River Valley's farmers' week. For enthusiasm and real enterprise, as well as rich content of programs and prominence of speakers, these meetings held high rank. To their success the women's clubs of Crookston and vicinity contributed greatly. Later a special women's short course was organized and held in June at the school. It has been very successful.

"I have already referred to the crops exhibit held in connection with the first short course during the holiday period in December 1910. This was in fact the beginning of the Red River Valley farm crops show, in turn, a forerunner of the Winter Shows. Beginning in 1915, the meetings and exhibits were held in Crookston. Later the armory was built to accommodate them. Special trains brought the visitors to the meetings and shows annually.

"The Red River Valley was primarily a grain producing region in the early part of the present century. World conditions were such that this type of farming was for a time successful. Gradually, however, changes occurred making a diversified farm program more profitable. I had come from southern Minnesota and had seen the advantages of mixed farming as against a one crop plan. The Red River Valley could produce livestock economically. Dairying and the establishment of co-operative creameries had already been given a considerable impetus. To afford all possible assistance to the livestock, dairying and poultry branches of farming seemed to me a major part of the Northwest Station's task.

"This underlying purpose prompted the organization of a livestock show as a part of the Northwest Station's farmers' week. The detailed account of this venture must be left for another day. Suffice it to say that by 1919 the newly organized Red River Valley Livestock association owned one large brick building located adjacent to the armory where the meetings were held. The annual livestock show had become a reality. Over 2600 individual farmers and business men contributed more than \$60,000 for the buildings which by 1921 had increased to three in number.

From that time on, it seemed livestock production was securing gradually, but firmly, a foothold in northwestern Minnesota. Poultry producers had held annually their poultry exhibit. They joined with the livestock and farm crops departments to hold the poultry show in connection with the Winter Shows.

"Earlier than this the Minnesota Red River Valley Development association had been organized to secure financial cooperation from the counties for the annual farm crops show. Legislation was secured permitting county boards to make an annual appropriation for this purpose. Later the Red River Valley Crops and Soils association, which I meeting here today, took over the technical management of the pure seed show, successor to the farm crops show. Another cooperating group is that of the Red River Valley Dairymen's association which was organized by Superintendent T. A. Hoverstad."

THE PART PLAYED BY THE NORTHWEST SCHOOL AND STATION IN THE DEVELOPMENT OF THE RED RIVER VALLEY

From Address by A. D. Stephens—Fortieth Anniversary Celebration

"An anniversary celebration is a gathering to exchange memories or concepts of a small beginning or minor event that has grown in its continuous or ultimate results beyond the hope or vision of the initiators.

"Thus we who were here can remember the small start of this station and compare that with the present achievement. And those who were not here can see what the station and school now is and be told of the modest farm dwelling and other comparably cheap buildings on leased land, now grown into this prideful school and fertile experiment station. The continued progress and results are due to thoughtful superintendency of Prof. T. A. Hoverstad, who gave some of his best years unselfishly to its upbuilding and that success of the station made the school possible in 1905.

"Then came Prof. William Robertson who thought but little of his own affairs, compared with his solicitude for the institution and its students. It is regrettable that he is not visible today but he may be here.

"Each person has a different idea of what eternity means. My theory is that it means a continuous mundane existence as long as the work done in the lifetime (as we call it) has an influence on Mankind, as long as the teachings and precepts laid down helps to guide the world. Thus Moses still lives; his commandments are still fundamental and are obeyed. Let me mention Martin Luther who will live as long as the Protestant church guides mankind to right living. Lincoln battled for principle and will live forever. Bismark did a big thing but his work did not have the element of spirituality. His existence ended with the World War and the appearance of Hitler.

"Professor Robertson will live as long as his pupils and their progeny will live a better and happier life because he was here.

"C. G. Selvig, of him not much need be said. You all know him. He was devoted and earnest and I believe that his eternity will depend more on his efforts here than on what he did in Congress. He accomplished more here, made more people happy and prosperous than by his congressional labors.

"Then A. A. Dowell, earnest, conscientious, capable. If he had not been all of these, the panic would have had a worse effect on the school. His success is not yet complete and will be outstanding. The progress made, however, could not have been brought about unless these men had either by good judgment or good fortune had with them a faculty and teaching force of superior quality.

"In everything but size, the school will compare more than favorably with any other.

"I was told to say something about the part played by the Northwest School and Station in the development of the Red River Valley. The subject is beyond me but I will remind you that many of the immigrants to the Red River Valley had lived in the coal mines in the east, others had followed a livelihood as fishermen in Norway, others again from the northern part of Norway were stock raisers and knew very little about tillage. To all of these the station was a godsend in helping them solve the problems of farming in the Valley.

"It was contended when the establishment of the school was asked for that one of the greatest benefits to the community, if not the greatest, would be that the students would go back to the farm and become agricultural teachers by precept and more by example. This has happened but time is too short to expand the subject. I will, however, mention one locality as a sample.

"It is susceptible of proof that the crops in the town of Bygland have been increased at least fifty per cent, if not one hundred per cent, and the value of the land itself on account of the greater income has appreciated in value all the way from \$25 to at least \$50 per acre.

"The great good the Crookston Winter Shows has done in the way of cohesive cooperation and emulation in all branches of agriculture may well be credited to the school which created the organization.

"Professor Hoverstad's turkey talks during his regime have added thousands of dollars to the wealth of the valley. To the school may also be credited the certified seed potato scheme which has made Valley potatoes sell beyond top prices. Many a farmer sleeps better nights now because the school was instrumental by experimentation to cause rustless or semi-rustless wheat to be planted in the Valley.

"A very important thing the school has done is to cause its alumni to re-

alize the difference between dependence and independence. I have made some inquiry and I do not find a single one of the eleven hundred graduates on the dole!—now misnamed relief. It was impossible to be sure about the four thousand students that did not graduate but it is reasonably safe to say that if there are any of them on the dole, it is a very small percentage.

"Dr. Harry Hopkins has stated that about thirty per cent or a little more of the 124 million are now on the dole or unemployed at a cost of \$1140 per year to the government for each head of the family. If the same percentage had been maintained in the 5100 students and graduates, it would have cost the government at least six thousand dollars per year to take care of them. An annual saving that at the present rate would pay annual interest on all that the school has cost.

"Governor Rice, while in favor of the school, frequently asked me, 'Andy, will it pay?' I told him then that education and betterment to humanity and living conditions could not always be figured in dollars and cents. But if he is listening now, the foregoing will answer his question in a monetary way.

"It would be a distinct blessing if the majority of the people of the United States could be induced to look upon governmental affairs as do nearly all of the alumni, that foolish, flighty, fanciful new theories are dangerous. The alumni are not ready to forget the teachings of five thousand years. They are not ready to join those who laugh at Solomon the Wise because he disparaged the improvidence of the grasshopper and lauded the industry and the thrift of the ant. They are not ready to change the word 'dictator' into 'manager.' Nor do they believe that the man who is willingly effortless should be cared for at the expense of the industrious. Nor do they believe that any man, or set of men, are wise enough to dictate the apportionment.

"I forgot to mention earlier, so will say now, that it seems almost providential that the four wives of the four wives of the four superintendents should each and all have been so thoroughly in harmony with their husbands' aims and efforts and all of them capable of giving assistance. It seems to me that I have said but very little of what should be said on the subject allotted me. The subject is too great, too vast for me to cover. Besides, my time is up and all I can hope is—that I have given some hint which can be verified and elaborated by anyone making a little investigation."

THE NEED FOR EXPERIMENT STATIONS

From Address by Dean W. C. Coffey—Fortieth Anniversary Station Celebration

"The program of the experiment station deals with the biologic, economic and social problems growing out of agriculture and rural life. As conditions change, new problems present themselves. As conditions become more complex, problems with increasingly difficult angles show up and the need

for their solution becomes more acute.

"In the public mind, the outstanding function of the experiment station has been to increase the production of plant and animal crops. In some respects the public was justified in getting this conception of the work of the experiment station. Practically all of the first demands made upon it were to solve difficulties being confronted in production. In some cases, it was a matter of discovering causes of and cures for checks and disasters that had overtaken production. In others, it was a matter of discovering methods of overcoming the factors or circumstances standing in the way of production. With respect to the latter, the Minnesota station has displayed her genius in finding methods of overcoming limitations normally imposed by cold climate. She has more than repaid all she has expended for all purposes in the hardy varieties of field and fruit crops she has developed. In bringing forward these varieties and emphasizing their good points, the public would very naturally gain the impression that increased production is a major experiment station objective.

"But perhaps the World War period did more than anything else to grip the public mind with the idea that the experiment station is concerned chiefly with the expansion of production. From every quarter came urgent pleas for maximum production in order that our soldiers and the soldiers of the allies might be fed. These pleas, supplemented by attractive prices, resulted in the quick application to production of facts brought out in researches made by experiment stations. The results left no room for doubt as to the efficiency of the results of agricultural research with respect to increasing producing power, and when the tables suddenly turned and surpluses replaced scarcity of agricultural products, this efficiency became lodged in the public mind as an obsessed purpose of the experiment stations.

"The experiment station is not interested in increasing the total volume of production. Many times it has warned farmers against trends toward overproduction of given commodities. But since plant and animal life must always be given major consideration by each and every farmer engaged in agriculture, the experiment station could not function efficiently without devoting a considerable amount of time and energy to production problems. This being the case, it is not just to accuse it of being dominated by the motive of increasing production as it announces discoveries relative to production even if its discoveries, as they often do, point the way to larger production per acre or per animal.

"Under present conditions, the more prominent objectives of the Minnesota Agricultural Experiment Station are to conserve land resources as a continuing source of wealth; plan the use of land, keeping in mind the need of adjusting production to demand; reduce the costs of production and marketing; improve the quality and marketability of farm and forest products and expand the use

and market outlets for these products. These objectives pertain directly to land enterprises. There are others addressed to problems involved in rural home and community life. When the work of the experiment station is appraised on the basis of these objectives, it is clear that there was never greater need for it than now.

"Some of the aspects of our rural life which are in immediate need of scientific study are as follows:

1. What is the new plane of rural living following the depression and the drought? What are the changes and retrenchments in farm family and community standards of living? What items, such as expenditures for health, education, and recreation, have been most affected by the depression? It is possible that farm families have an accepted optimum standard of living to which they tenaciously hold, and below which they cannot be long held without dangerous social reactions. What are the implications of these changed ways of living for public agencies and social institutions such as schools, the church, and social welfare facilities?

2. The number of farms in Minnesota has been increased by over ten per cent since 1930. All except three counties (Chippewa, Martin and Wabasha) in the state report a gain in number of farms. This is a general national trend. Many of these new farms are part time enterprises. There is a need for a study of the part time farm to see whether its economy is subsistence or subsidy, to discover what are the social implications for rural and urban society of this rapid growth.

3. American people are constantly migrating. The farm to city migration has been looked upon as a major problem; during the depression we have seen a great back-to-the-land movement. But nearly every year during the last fifteen, at the same time that one to two million people were leaving our farms for the city, almost as many were leaving the city to go out on farms. This whole question of migration between farm and city is largely an unexplored field and needs continuous investigation. An analysis of these migrants by age, sex, occupation and, if possible, financial and social status, would help to give insight into the favorable and unfavorable circumstances of rural life.

4. Tenancy is steadily increasing. In Minnesota, in 1930, 31.1 per cent of all farmers were tenant operated. There is a high turnover of tenants in frequently changing farms. What are the implications of this increase in instability from the standpoint of the tenant family and from the view of the community's social life and social services?

5. We commonly speak of submarginal areas, using economic criteria as the basis of submarginality. It is possible that we should define submarginal in terms of social criteria as well as economic. Research is needed to discover what constitutes a submarginal area from the social point of view.

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ANIMAL HUSBANDRY AND POULTRY WORK SUMMARIZED

(Continued from Page 2)

wheat, therefore, depends largely upon the price of wheat as compared with barley.

Rye was found to be less palatable than other common grains for fattening baby heaves. This grain is frequently infested with ergot. In one trial, the ergot content was .5 per cent, although the rye grain was of good quality. Calves receiving ground rye from this lot of grain gained 1.67 pounds per head daily as compared with 2.09 pounds for calves fed on a ration of equal parts of ground wheat and barley. The rye fed calves were in poor market condition at the close of the trial. In a second trial, the rye contained from .04 to .06 per cent ergot. The ground rye fed calves in this trial made slightly better gains than the calves fed ground barley, the gain for the rye fed group averaging 2.2 pounds per head daily and for the barley fed calves, 2.1 pounds. The lot fed rye required 424 pounds of grain for each one hundred pounds gain and those fed barley, 489 pounds.

Molasses beet pulp was used in one trial and proved to be equal to barley as a feed for fattening calves. Adding molasses beet pulp to ground barley improved the feeding efficiency of barley as compared with barley alone. At the close of the trial, the lot receiving beet pulp and barley was valued at 75c per hundredweight higher than the barley fed lot.

Swine Breeding Investigations. Crossbreeding of swine has been carried on at this station for several years. The Yorkshire and Poland China breeds were used in this project. Reciprocal crosses of these two breeds have also been made. Litters of backcross pigs were produced from Yorkshire-Poland China sows sired by a Poland China boar. Pigs from Yorkshire-Poland sows by a Duroc Jersey boar have also been produced and are commonly referred to as outcross pigs.

The crossbred pigs were somewhat heavier at birth than the purebred pigs. The average birth weight of purebred pigs was 2.59 pounds; of crossbred pigs 2.73 pounds; of backcross pigs 2.72 pounds, and of outcross pigs 2.67 pounds. The respective average weights at weaning time were as follows: purebred pigs, 29 pounds; crossbred pigs, 37 pounds; backcross pigs, 33 pounds, and outcross pigs, 33 pounds. Pigs were weaned at an average age of eight weeks.

Crossbreeding swine should be looked upon as a means of producing market pigs only. However, in this investigation crossbred gilts were also used and invariably the backcross pigs made more economical gains than either the straight crosses or the outcross. The outcross groups have been the least desirable of any of the crossbred pigs. The farmer who contemplates crossbreeding must realize that the success of the crossbreeding enterprise will depend upon the use of good purebred foun-

dation stock. The fact that purebred animals of two breeds must be maintained or purchased is undoubtedly the undesirable feature of a permanent cross breeding program.

Another swine breeding project initiated in the fall of 1934 has for its object the determination of the relative merits of the highly inbred Poland China swine produced at the Southeast Experiment Station in developing a purebred herd of swine. In this project two strains of purebred Poland Chinas will be developed: one strain through the use of highly inbred boars, and a second strain developed from boars selected by the usual method.

Pasture Trials with Dairy Cows. During the summer of 1932 and again in 1933, records were kept on one group of cows in milk on sweet clover pasture and on a similar group pastured on grass. The grass pasture was mostly quack grass with some small spots of blue grass. The cows on the sweet clover pasture did not maintain their body weight quite as well as those on the grass pasture. The milk from cows on sweet clover pasture, however, possessed a more pleasing flavor than that from the cows on the grass pasture, and was free from a rather disagreeable odor that was characteristic of milk from the grass pastured group. The milk from the sweet clover pastured cows was of superior quality thruout the pasturing period, while that from the grass pasture improved in both taste and odor as the grass became more mature. After six weeks of pasturing, there was little difference in the quality of the milk produced by each group.

These two trials were conducted during unusually dry years, and as both pastures were overstocked, the pasture seasons were rather short. Nutrients produced per acre by each pasture and the required yields of different crops necessary to produce an equivalent in nutrients are shown in the following table:

YIELD OF SWEET CLOVER AND GRASS PASTURE

Days Pastured	1932		1933	
	Grass	Sweet Clover	Grass	Sweet Clover
Days Pastured	70	70	60	60
Total T.D.N. per acre (lbs.)	941	2134	832	1605
Equivalent in nutrients to:				
Corn per acre (bu.)	21	48	18	35
Barley per acre (bu.)	25	58	22	42
Oats per acre (bu.)	42	97	37	72
Wild Hay per acre (lbs.)	1950	4525	1725	3550
Alfalfa Hay per acre (lbs.)	1850	4300	1630	3115
Corn Silage per acre (lbs.)	5600	13000	5000	9550

Sheep Breeding Investigations. A sheep breeding project dealing with the question of size in market lamb production was initiated at this station in the fall of 1933. Two groups of grade ewes were purchased for this project, one group possessing large size with evidence of characteristic rapid growth, and the other group was composed of fine boned ewes of medium size. The group of large ewes were mated to a purebred Shropshire ram of large type, while the group of medium type ewes were mated to a purebred Shropshire

ram of compact form and medium type.

The large type ewes produced a 184 per cent lamb crop at birth, while the medium type ewes produced 154 per cent lambs. Lambs from the large type ewes averaged 9.4 pounds at birth compared with 8.6 pounds for the lambs from the medium type ewes.

Both groups ran together on pasture from the opening of the pasture season until August 9, at which time the lambs were separated and placed on feed until October 27. On August 9 the lambs from the large type ewes averaged 64 pounds each, while the lambs from the medium type ewes averaged 58 pounds each. During the finishing period, the large type lambs made an average daily gain of .33 pounds as compared with an average of .30 pounds in the other group. At the close of the trial, the large type of lambs averaged 91 pounds and were valued at \$6.15 per hundred weight, while the medium type group averaged 82 pounds and were valued at \$6.25 per hundred weight.

The tendency of ewes to produce single or twin lambs is also being given attention at this station. In the fall of 1933 the breeding flock of purebred Shropshire ewes was divided into two groups. Ewes that came from a line of maternal dams showing a tendency for single lamb production were placed in one group, designated as the Single Ewe Group, and ewes from dams indicating a tendency for a high percentage of twins were placed in the Twin Ewe Group.

The ewes in the Single Ewe group produced a 125 per cent lamb crop at birth in the spring of 1934 compared with 155 per cent in the Twin Ewe group. The average birth weight of all lambs in the Single Ewe group was 8.96 pounds, while those in the Twin Ewe group averaged 8.45 pounds. The ram lambs in each group were larger at birth than the ewe lambs, and both sexes in the Single Ewe group were

heavier than in the Twin Ewe group. This trial is being continued this year with a view to securing data on comparative returns from single and twin lambs.

POULTRY HUSBANDRY

The Northwest Experiment Station maintains purebred flocks of White Leghorn and Rhode Island Red poultry. Approximately 700 laying hens are carried thruout the year. As an average over a period of years, six thousand baby chicks, ten thousand hatching eggs, and one thousand quality breed-

ing cockerels and pullets have been sold each year to farmers and poultry breeders for foundation stock. Pullets for replacement purposes are selected from 2200 chicks hatched and developed each year at the station plant.

Emphasis has been placed on pedigree trap nesting and feeding trials with laying hens and growing chicks. As a result of consistent trap nesting records and rigid selection, the average production of the station flock was increased from 144 eggs per hen during the year 1922-23 to an average of 221 eggs in 1933-34. In 1927, six White Leghorn hens produced over 300 eggs each during the laying year, with a maximum record of 318 eggs. During more recent years, many hens have produced over 300 eggs, the highest record being 321 eggs.

Cod Liver Oil for Laying Hens. The addition of one per cent cod liver oil to a standard laying ration resulted in an increase of 6 per cent in egg production, 14 per cent in fertility, 19 per cent in hatchability and reduced mortality by 1.1 per cent. The grain ration consisted of a mixture of two parts wheat, one part corn and one-half part each of barley and oats fed in a deep litter of straw twice daily. A mash made up of the same grain mixture ground plus 20 per cent meat meal, 2 per cent charcoal, .5 per cent salt, with 1 per cent cod liver oil, was placed in open feed hoppers and kept before the birds at all times. Grit and oyster shell were also available at all times.

Later trials indicated that Burbot fish oil, which is produced in limited amounts in northern Minnesota, is equal to cod liver oil as an antirachitic addition to the poultry ration for laying hens and chicks.

Grain Rations for Egg Production. The comparative value of common grains for laying hens was given attention in two trials each extending over a 365 day period. Grain combinations consisted of equal parts by weight of wheat and barley, wheat and oats, wheat and corn, barley and corn, barley and oats, and corn and oats. All

pens were fed one-third of their daily allowance of scratch grain at 6 a. m., and two-thirds one hour before sundown. A dry mash, consisting of equal parts of the two grains used in the mixture, ground, plus protein supplements was available in open hoppers at all times. A moist mash made up of the dry mash mixture to which sufficient milk was added to moisten was fed daily at noon. Grit and oyster shell were also before the birds at all times.

Wheat and barley proved to be the most efficient grain combination from the standpoint of egg production. The average egg production on this combination was 59.4 per cent compared with 54.3 per cent on corn and oats; 54.2 per cent on wheat and corn; 54.0 per cent, wheat and oats; 53.8 per cent, barley and oats, and 53.3 per cent on the barley and corn combination. Mortality during the laying season varied from 12.6 per cent in the barley and corn pen to 20.0 on wheat and barley. Mortality appeared to increase with the increase in egg production, although there was some variation from pen to pen. Fertility varied from 90.7 to 92.4 per cent, with the highest fertility in the pens with the lowest egg production. There appeared to be no relationship between hatchability and egg production, although there was considerable variation from pen to pen. Hatchability varied from a minimum of 62.5 per cent on corn and oats to a maximum of 68.3 on wheat and corn.

Feeding Newly Hatched Chicks. Chick feeding trials indicated that the custom of fasting chicks from two to three days after hatching should be discontinued. Chicks fasted for 48 hours lost 31.9 per cent of their original body weight, while those fasted for 72 hours suffered a loss in weight of 44 per cent. Chicks fed immediately after hatching made an average gain in weight of 229 grams per chick during the first three weeks after hatching, while those fed at 24 hours made an average gain of 266 grams and chicks fasted 72 hours gained 186 grams during the three week period. In these trials, best results followed feeding 24 hours after hatching.

tutions need to know the facts to adjust themselves to changed conditions. The most effective units of organization and administration and the possibilities of integrated and coordinated efforts have not been thoroughly investigated.

7. Finally, the new field of rural social psychology is wholly unexplored in a scientific manner. What are the farmers' attitudes, his habits of thinking? What has been the effect of modern scientific agriculture on the personality of farmers? How has the depression influenced farmer opinion? Do the farmers think differently than urban people and how can we account for the difference in opinion? This problem has important consequences for social organization and community programs, and even for government."

PERSONALS

Miss Elesia Simonson, school nurse 1927-1929, visited relatives and friends in Minnesota during the month of June. She remained over for the alumni reunion before returning to Alaska where she has been employed during the past six years. Miss Simonson and Miss Ruth Sheldon, former school nurse, will be stationed at Kakanak during the coming year.

Mr. and Mrs. R. J. Chritgau and family visited relatives and friends at Austin and other southern Minnesota points during the first two weeks in June.

Superintendent and Mrs. A. A. Dowell and family attended the Iowa State College alumni reunion at Ames, Iowa, on June 29. Dr. and Mrs. Dowell graduated with the class of 1915. This was their twentieth anniversary reunion. Activities included special class luncheons and get-togethers followed by the alumni-faculty-senior banquet at which Mr. Dowell appeared as one of the speakers.

Misses Katherine Hennig and Constance Lane provided the vocal and instrumental music in connection with the dinner held during the semi-centennial celebration at University Farm June 14.

Mr. and Mrs. S. A. Anderson (Rose Polski) and Mr. Dave Milligan attended an agricultural engineering conference which was held at Atlanta, Georgia, during June.

Mr. and Mrs. A. M. Foker and family have been vacationing at their cottage near Cass Lake; Mr. and Mrs. R. S. Dunham and family at Detroit Lakes, and Mr. and Mrs. H. A. Pflughoeft at Burnside lake near Ely. Registrar J. W. Mlinar is visiting in the Twin Cities and Chicago, while Mr. O. M. Kiser and daughter Beth are visiting in Chicago and Kansas City.

Iver Tande of Oklee died Monday, June 2, in a Thief River Falls hospital. He is survived by his wife (Stella Sorenson, '24) and two sons, Olaf and Robert.

Gerhart Holte, '18-19, of Gonvick, passed away suddenly on May 24 from heart failure.

COMPARISON OF GRAIN MIXTURES FOR LAYING HENS

Grain Mixture	Average of Two 365-Day Trials			
	Egg Production Per Cent	Mortality of Hens During Trial Per Cent	Fertility Per Cent	Hatchability Per Cent
Wheat—Barley	59.4	20.0	90.7	67.2
Wheat—Oats	54.0	14.6	91.5	67.6
Wheat—Corn	54.2	17.3	90.5	68.3
Barley—Corn	53.3	12.6	92.4	65.0
Barley—Oats	53.8	17.3	91.6	68.5
Corn—Oats	54.3	16.6	90.8	62.5

THE NEED FOR EXPERIMENT STATIONS

(Continued from Page 6)

6. The field of rural social institutions and rural social organization is a fertile field for research. The problems revolving around rural education, for example, are important for the future. Farm areas have a small proportion of their number in the producing age

group and have less wealth and smaller income than the urban population, yet are called upon to bear the cost of more dependents. For example, in Minnesota, only 34.4 per cent of the urban population is in the age group under 20, but for the rural farm population, 42.4 per cent are in the group under 20 which must be educated.

Religious, health, recreational insti-