

# The KANSAS AGRICULTURAL STUDENT



VOL. VIII, No. 2 DECEMBER, 1928  
MANHATTAN, KANSAS

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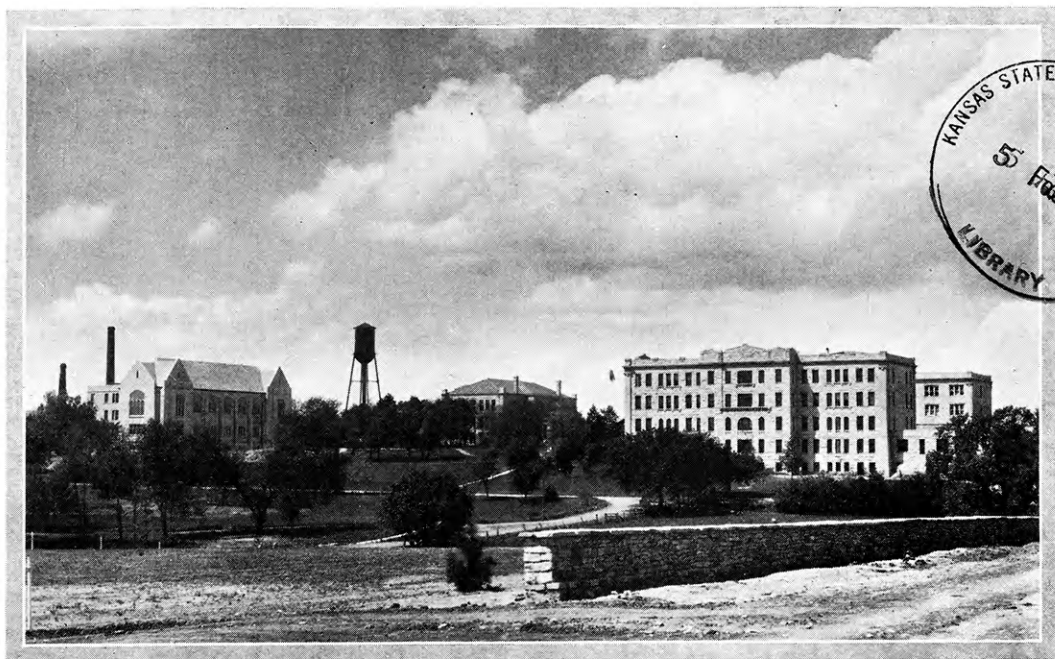
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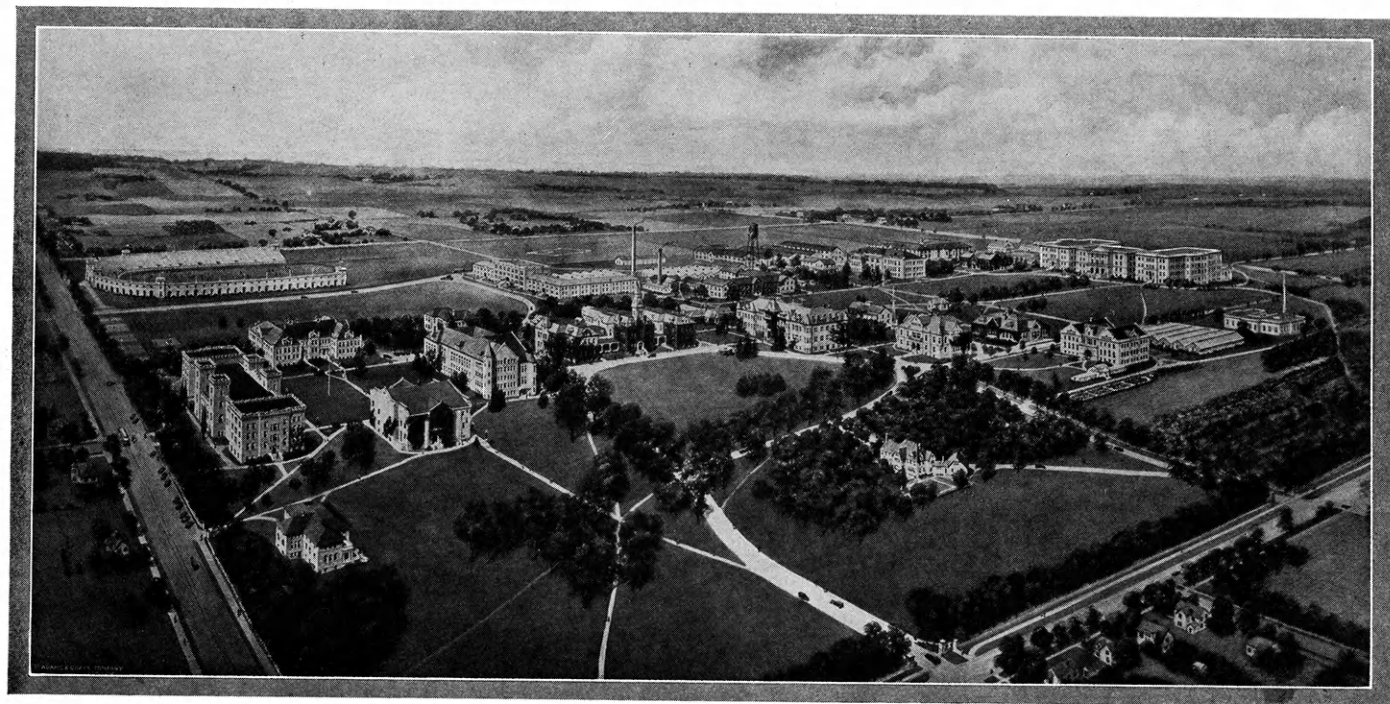


LIBRARY, VETERINARY HALL, AND WATERS HALL AS SEEN FROM THE NORTHEAST

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AIRPLANE VIEW OF K. S. A. C.



# The Kansas Agricultural Student

VOL. VIII

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No. 2

## Power Farming in the Development of Southwestern Kansas

M. L. Russell, '29

Agriculture in southwestern Kansas has passed through a series of cycles of prosperity, decline, and prosperity. This started with a sudden rise and almost equally sudden decline at the time this territory was thrown open for settlement under the Homestead act. The lure of new land drew many people into this country seeking their fortunes. They came face to face with the stern requirements of pioneer life and the majority were forced to abandon their dreams and go "back east" after the second or third year.

The failure of these early settlers was attributed to adverse land and weather conditions which were unsuited to the production of crops. As a result this territory was practically abandoned to the cattlemen for several years. The reason for this failure was the lack of information, or rather the abundance of misinformation, these settlers had received regarding the true conditions. They came expecting to find a new free land similar in all respects to the older country they had left. They brought the same implements; planted the same varieties of seed; and followed the same cultural practices they had used "back east." As they were expecting to make a fortune the first year they had little or no resources to carry them over the lean years. Consequently, after the second or third failure most of the settlers were driven out disillusioned and "broke."

Apparently the attempt to develop western Kansas had failed, but there were a few who stayed and they were the ones who proved the value of this new country. Perhaps some had a little more capital than the rest and had faith enough to stay while others had nothing to go back to and were forced to stay.

Gradually they adapted their farming prac-

tices to new conditions and farming became profitable on a small scale. Progress was halted temporarily by a land boom which created a period of false prosperity followed by depression. After recovering from this slump, agriculture has slowly gained in importance until the last few years when the growth has been phenomenal. The southwestern section of Kansas has developed more rapidly in the last few years than any other part of the state. An extract from a report of the United States Census Bureau for Haskell county in 1926 is typical of the entire southwest.

	JANUARY 1, 1920	JANUARY 1, 1926
Number of farms .....	177	360
Operated by owners..	97	175
Operated by tenants..	78	179
Land in farms		
Total acres .....	128,165	245,959
Value of farms		
Land and buildings..	\$2,672,950	\$4,842,250
Crops		
Wheat, acres harvested .....	18,372	70,635
Wheat, quantity harvested ..	129,904 bus.	1,073,598 bus.
Domestic animals		
Horses .....	2,006	6,089
Cattle .....	5,662	7,979
Swine .....	507	2,382

The present period of development has been made possible by the invention and improvement of power farming machinery, improved tillage practices, and the introduction of new and better adapted varieties of crops.

Hard winter wheat has helped more in the development of southwestern Kansas than any other crop. It is not only able to grow and mature under the adverse conditions of low rainfall and extremes of temperature but is also well adapted to large-scale production. The acres per man are increasing in direct proportion to the development of power machinery. Harvesting has been the factor limiting the size of wheat farms but with

the development of the combine this limiting factor has been removed. Combines were introduced into Kansas 10 years ago and the wheat acreage has increased over 70 per cent since that time.

There has been 1,500 per cent increase in the efficiency of man power in the last 100 years. This is shown by figures taken from the report of Prof. H. B. Walker, formerly head of the Department of Agricultural Engineering, K. S. A. C., to the Kansas State Board of Agriculture in 1926. It took 25,000

the combine and the medium-priced general-purpose tractor came a need for cheaper and faster methods of seed bed preparation. This need was filled for a time by the introduction of the tandem disc harrow and the three-row lister and "ridge-buster." These implements made it possible for one man to prepare 30 to 40 acres a day as compared with 20 men using the mold-board plow. This increase in speed is important because of the low rainfall and high rate of evaporation which dries out the surface soil if it is not



A COMMON SCENE IN POWER FARMING

A medium-priced general-purpose tractor and a three-row lister covers the ground rapidly and makes possible early and thorough preparation of the seed-bed for winter wheat.

men with 8,274 combines 15 days to cut, thresh, and put on the market 50,540,000 bushels or nearly one-third of the 1926 wheat crop. If it had been necessary to harvest this crop by the methods of 1826, namely, cradle, hand bind, and shock, it would have required the services of every man in the state from 15 to 60 years of age and in addition the women from 20 to 37. It would have taken a total of 775,000 men working 20 days to put this crop in the shock. Although only recently introduced, combines have gained great popularity in this state. They have increased from 14 in 1918, to 20,000, in 1928.

Closely connected with the development of

in the best of condition and worked at the proper time.

Soil blowing has brought about the development of the one-way disc plow. This implement has helped solve the problem of cheap, quick, and efficient seed bed preparation. It will stir the soil to a depth of 2 to 5 inches, kill weeds, leave the surface rough and cloddy, and leave part of the stubble exposed. The newer plows of this type are so constructed that they may be changed from 10-foot cut for shallow cultivation to 8-foot cut for deep plowing. This makes it possible to adapt the plow to meet seasonal moisture conditions and suits it to the practice of summer fallow. The first plowing

may be as deep as necessary and subsequent cultivation of from 2 to 3 inches may be made as often as necessary to control weeds. This makes it possible to summer fallow thoroughly with the one implement.

The spring tooth cultivator, which has been used for several years in the northwestern part of the United States is being introduced in southwestern Kansas and is

(Continued on page 58)



Courtesy, W. T. Caldwell, Dighton Herald.

#### SCENES IN LARGE-SCALE POWER FARMING NEAR DIGHTON, LANE COUNTY, KANSAS

The above photographs taken by Conard-Kirch of Garden City, present some wheat-harvesting scenes typical of the large wheat farms in southwestern Kansas. The photographs were taken on the farm of Ray Terwilliger, who may be seen in the standing wheat of the lower photograph, and also may be seen in each of the other photographs.

# “Health Sticks to Clean Chicks”

R. F. Brannan, '29

The fact that poultry is becoming more and more to be regarded as one of the important enterprises of the farm, has made the disease problem one of much concern to farmers and poultry raisers. Intensive poultry production has increased the prevalence of poultry disease. Any small increase in losses rapidly reduces the profit from the poultry enterprise. The heaviest losses usually occur with baby chicks and sanitation is the only means of controlling and preventing serious losses from disease. It is, therefore, necessary that a program of sanitation and balanced feeding be adopted if this critical phase of poultry production is to be safeguarded.

The “Kansas Grow Healthy Chick campaign,” as outlined by the Extension Poultry Specialists of Kansas State Agricultural College, gives four simple points in brooding in order to rear 90 per cent of the chicks

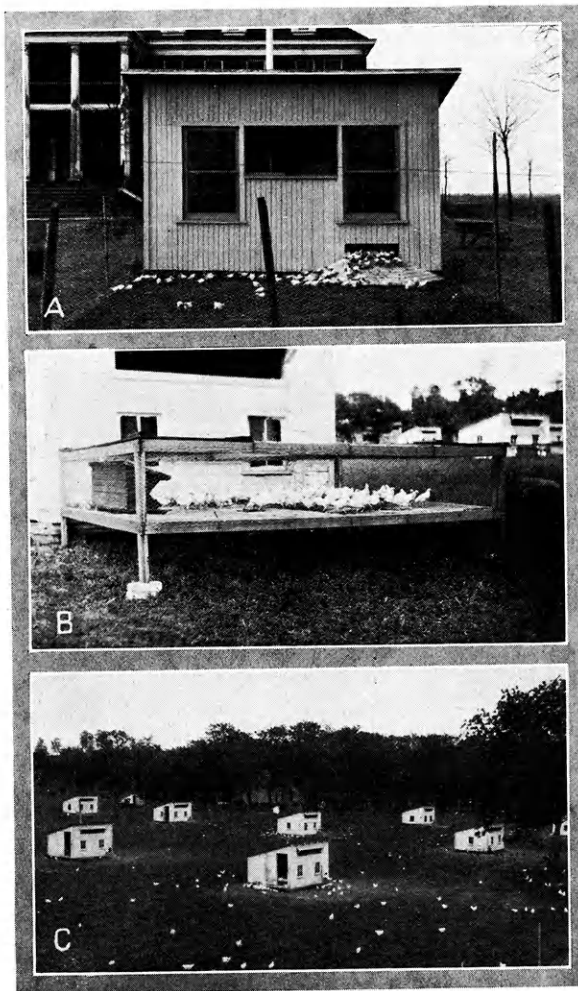
hatched. The chicks produced according to these directions will grow into more profit-

able birds to be kept for layers and breeders. Health and vigor, which will go with the

birds through life, may be obtained by following sanitary methods. The four points set as guides in this program are: (1) Clean chicks. (2) Clean houses. (3) Clean ground or runways. (4) Clean feed. By following these four points the annual egg production has been increased 30 eggs per bird in farm flocks. This increase at 25 cents per dozen means an additional return per year of 62½ cents per bird.

**Clean Chicks—**Sanitation for baby chicks must start in the breeding flock. The most serious disease transmitted through the breeding flock to the chick is bacillary white diarrhea, which causes heavy losses to baby chicks. The carrier hens may be eliminated by testing the flock by the agglutination or blood test. The removal of the

carrier hens does not materially affect the production of the flock. The carrier hen is



SOME SATISFACTORY BROODING EQUIPMENT

(A) Movable brooder house with clean ground range. As many as 360 chicks may be brooded in this house and enclosure. (B) Sanitary runway with small storm-proof self-feeder on the hail-screen floor. (C) Pullets on free range. The pullets are put on free range after 8 or 10 weeks, the young cockerels being marketed or penned by themselves for fattening or for development for breeders as the owner may desire.

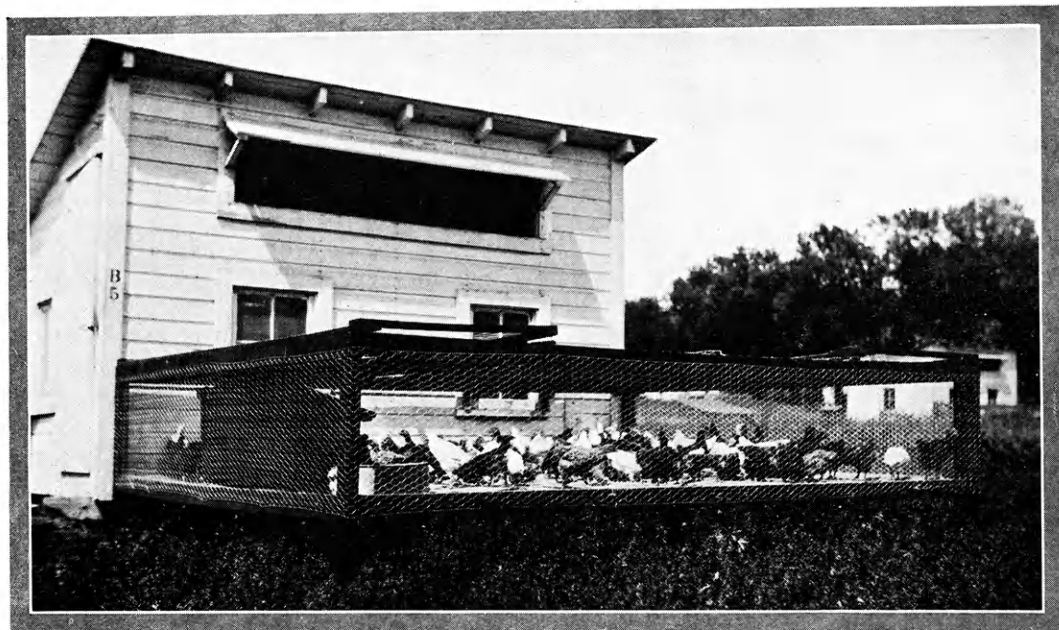


usually a very low producer for infection is in most cases located in the ovary.

**Clean Houses**—Sanitation in the brooder house is essential. If possible, the brooder house should be left vacant from the previous brooding season, and in a position where it may receive the benefit of sunlight. Before moving the brooder house to the clean range, it should be thoroughly cleaned and disinfected. The equipment should be removed and washed and disinfected. A good disinfectant for this may be made by mixing 1 pound of

runways for chicks until they are 8 to 10 weeks of age.

With the rotation method it is necessary to have a movable brooder house which can be moved to clean ground each year. The 10 by 12-foot K. S. A. C. movable brooder house (see "A," accompanying illustrations) is designed for this purpose. This house has a capacity of 360 chicks when it is located on clean ground and the chicks are given free range. The clean ground should be a site that has not been used for brooding or range



ABOUT 250 HEALTHY CHICKS AT HOME IN THEIR SANITARY RUNWAY

These chicks are nearly old enough to have the cockerels and pullets separated and the pullets put on the range. Notice the small storm-proof self-feeder inside the sanitary runway.

lye with 30 gallons of boiling water. This cleaning should be done early in the season followed by another disinfection before putting the chicks in the house. Any good standard disinfectant will be satisfactory for the second disinfection.

**Clean Ground or Runways**—It is necessary that the clean chicks be brooded on clean ground or runways in order to keep the chicks free from infection. There are two alternatives in securing these conditions. They are, (1) rotation of ground, (2) clean

for adult birds for at least two years. Ground, that has been limed and plowed and planted to a cultivated crop is preferable. In addition, it is necessary that the ground be well drained and have a southern slope if possible.

The clean runway method is to be used where permanent brooder houses are used or where rotation of ground is impossible. The chicks are reared under confinement in the brooder house and runway. There are two types of runways that may be used under

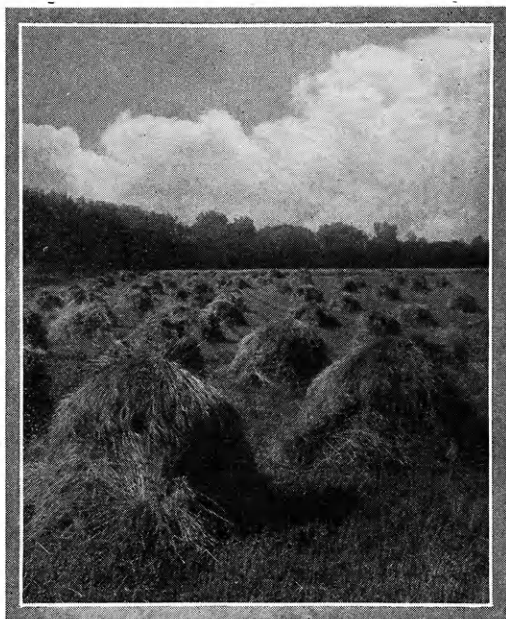
(Continued on page 43)



# The Importance of Wheat in Kansas

R. O. Lewis, '29

There are three cereal grains of world-wide importance as human food—wheat, corn, and rice. Corn was unknown in the Old World but since the discovery of America it has become a major crop although yet of comparatively little importance as human food. Practically all of it is fed to live stock. The production of rice is limited to very definite localities as it requires a hot moist climate



A FIELD OF KANRED WHEAT ON THE AGRONOMY FARM

with facilities for both irrigation and drainage. These factors limit the amount of rice which can be produced.

Wheat can be produced under a wider variety of climatic and soil conditions than almost any other grain. Furthermore, it has the characteristic of making light or "leavened" bread which is not found to so great an extent in any other grain. This property is due to the protein called gluten in wheat. Thus a high protein content is desirable.

Mythology teaches that Ceres, the goddess of agriculture, taught men to grind grain and make bread from the meal. Ancient lit-

erature speaks of the excellence of sifted meal which must have been crude indeed compared to our modern flour sifted through silk bolting cloth.

Wheat from earliest times has been a mark of superiority or aristocracy. Barley was an important grain in Bible times and was used as a food by peasants. Ruth gleaned after the harvesters in the fields of Boaz, but it was barley she gleaned. Solomon, the highest in splendor and luxury in his day, lists among his daily rations fine flour and meal. Today wheat is the principal food of the leading nations of the world excepting certain Oriental countries where rice is the staff of life.

According to recent statistics from the Bureau of Agricultural Economics of the United States Department of Agriculture the per capita consumption of wheat in the United States is about five bushels which makes about two hundred pounds of flour. This is approximately one-third of the total food used by each person yearly.

Wheat is botanically a grass and thrives best under conditions favorable to grasses. While it is grown under a wider variety of climates than almost any other crop it is best suited to areas with a "continental" type of climate. The characteristics of this climate are fairly severe winters and comparatively light rainfall most of which comes during the growing months. Certain areas of the world have such conditions and these areas constitute the leading wheat-producing countries of the world. Taking the average wheat production for the last five years (1923 to 1927) the nine leading wheat-producing countries are shown in the following table:

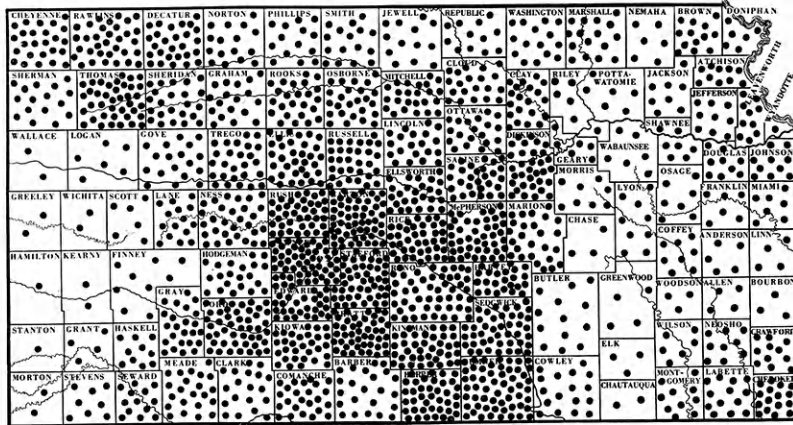
Average Annual Wheat Production for Five-Year Period			PER CENT OF WORLD'S CROP
COUNTRY	AVERAGE PRODUCTION		
United States .....	809,165,200 bus.		21.3
Russia .....	486,738,000 bus.		12.8
Canada .....	391,453,800 bus.		10.3
India .....	351,126,800 bus.		9.2
France .....	272,434,000 bus.		7.2
Argentina .....	209,351,000 bus.		5.5
Italy .....	203,621,400 bus.		5.3
Spain .....	142,709,000 bus.		3.7
Australia .....	134,873,000 bus.		3.5

The United States with its vast plains area produces more than one-fifth of the total supply of wheat in the world. Russia ranks next in quantity produced but produces only a little more than half as much as the United States, so it is plainly evident that the United States is the outstanding wheat-producing country of the world.

Since the United States is the largest wheat-producing country of the world, figures on its chief wheat-producing areas will be presented. Taking an average of the same

10-year period (1918 to 1927) the average acreage of wheat harvested annually in Kansas was 9,304,420 acres. The approximate distribution of this acreage is shown in the accompanying illustration. The annual wheat crop of Kansas would supply 23,764,000 people, nearly one-fifth of the population of the United States, with their daily bread.

In 1927 there were 22,401,397 acres of land cultivated in Kansas. Wheat, corn, and oats were the principal crops and ranked as shown in the following table:



● Each dot represents 5000 acres

MAP OF KANSAS SHOWING AVERAGE APPROXIMATE ACREAGE OF WHEAT HARVESTED IN EACH COUNTY ANNUALLY, 1918 TO 1927

period (1923 to 1927) the 10 leading states in wheat production are shown in the following table:

Average Annual Wheat Production for Five-Year Period		
STATE	AVERAGE PRODUCTION	PER CENT OF U. S. CROP
Kansas .....	118,820,000 bus.	14.50
North Dakota .....	104,187,000 bus.	12.80
Illinois .....	46,581,000 bus.	5.76
Montana .....	46,397,000 bus.	5.73
Oklahoma .....	45,426,000 bus.	5.65
Nebraska .....	44,796,000 bus.	5.52
Washington .....	40,170,000 bus.	4.96
Ohio .....	35,256,000 bus.	4.35
Indiana .....	30,379,000 bus.	3.75
South Dakota .....	29,419,000 bus.	3.63

Thus Kansas is the leading wheat-producing state of the leading wheat-producing country of the world. During the past five years Kansas has produced annually 3.3 per cent of the world's wheat supply. During the

The 1927 Production of the Three Leading Crops in Kansas

CROP	ACREAGE	PER CENT OF TOTAL ACREAGE	VALUE
Wheat	10,083,428 acres	45	\$130,294,960
Corn	5,656,361 acres	25	113,924,418
Oats	1,637,434 acres	5	15,336,385

Nearly one-half of the Kansas crop acreage is planted to wheat and it brings more income to Kansas farmers than any other crop.

In addition to quantity production, Kansas produces wheat of high quality. Quality of wheat is measured by protein or "gluten" content. This is influenced by three factors—soil, climate, and variety. Nature provided Kansas with the best of climate and soil and Kansas farmers are using the best adapted varieties.

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MANHATTAN-KANSAS

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## AG ASSOCIATION DUES

Have you, fellow student of the Division of Agriculture, paid your Ag Association dues for 1928-'29? If not, why not? The treasurer of the association, Mr. T. W. Kirton, wrote you a clever, straight-forward first-class letter. He enclosed a self-addressed envelope and urged that a check be sent by return mail. He got a 25 per cent response. Is that the Ag way?

The work of the Agricultural Association is well known to the students of the division. Its two prominent functions are the awarding of medals to K. S. A. C.'s intercollegiate contestants in the judging of farm products and the promoting and supporting of The Kansas Agricultural Student. Each of these undertakings suffers if not provided with approximately \$150 a year. Altogether the association activities demand a budget of at least \$400 a year.

Every cent of Ag Association money is economically spent for activities and enterprises that boost the Division of Agriculture and are of interest to every student in the division. Why then shouldn't 100 per cent of the students pay their share as they do in any business organization? Do 50 per cent of Ag students want to ride on passes and

have medals presented in their names without having contributed a cent toward the purpose themselves? Are they proud that certain things are done and yet unwilling to have any substantial part in supporting them?

Or, on the other hand, are you just careless about this and willing to throw a lot of responsibility on officers you have elected? If this is true, have you been serious and fair with yourselves?

Your officers are up against a real business proposition. They are raising some serious questions. Do you want the Ag Association to remain a voluntary association or do you want its projects supported by fees collected on enrollment each semester as they are in many other institutions and as they are in the Division of Engineering of our own institution? Every Ag who fails to pay his dues casts one vote for the fixed fee. Many Ags who are familiar with the rolls of those who have paid their dues in recent years and with the business of the Agricultural Association are advocating the fee as the only safe solution of the problem. Others hesitate and all are willing to make another appeal to those who are not paying their way.

Why not "snap into it," fellows, and not

excuse yourselves by saying you just put it off or forgot it. You have elected T. W. Kirtton as your treasurer. He, or a committee he might select, haven't the time to make personal canvasses. Let each one do his part and the proposition will be put over in a really big and business-like way.

### A CORRECTION IN LAST YEAR'S HONOR ROLL

Ralph F. Germann, a freshman last year from Fairview, Brown county, should have had his name on the "Honor Roll" of the division printed in our last issue. Mr. Germann passed 37 credit hours and earned 71 points during the college year, 1927-'28.

Mr. Germann was reported a condition in Physical Education for the second semester. Any such delinquency would keep a student from the honor roll of the division. However, this delinquency was reported as a result of a clerical error. This magazine regrets its published roll was in error and hopes to make amends as far as possible.

### TO OUR COLLEGE STUDENT SUB- SCRIBERS

What do you do with your copies of the Ag Student after you have looked them over carefully and read parts of real and immediate interest? Why not do one of two things: (1) Save them for binding and have the four issues of the school year bound in a neat book for future reference and a souvenir. (2) Send them to "Dad" or some friend or relative who will appreciate them. Take your copy to the Dean's office and it will be mailed for you if you wish.

### OUR ADVERTISERS

Look over our ads. You will be interested in some of them. Our advertisers are among our boosters. Their offerings are among the best available in their respective lines. Call on them when in need of their services or goods in their lines. Your consideration in this respect will be appreciated.

C. E. Dominy, '26, one of the former editors of The Kansas Agricultural Student, is now district sales supervisor for Swift & Company with headquarters in Salina.

### HEALTH STICKS TO CLEAN CHICKS

(Continued from page 39)

this method, the clean gravel runway and the sanitary runway. The bottom of the first type of runway is filled with clean gravel to a depth of five or six inches. The gravel may be held in place by means of boards or hollow tiles around the sides. The runway is enclosed and covered with wire netting, which will prevent the escape of the chicks or the entrance of other fowls.

The second type of runway is known as the sanitary runway and may be constructed at a cost of about \$12. This runway should have the same area as the brooder house. The floor of the runway (see "B," accompanying illustration) is constructed of ½-inch mesh hail screen, and is raised 12 to 18 inches above the ground thus preventing the accumulation of droppings.

There are several important points to be observed in the use of the sanitary runway. They are:

1. With a 10- by 12-foot brooder house, not more than 250 chicks should be kept in each house. The restricted range makes conditions more crowded and larger numbers increase mortality.

2. When brooding in confinement precaution should be taken to prevent visitors from entering the brooder house, and the attendant should wear rubbers when going into the house and remove them when leaving, or step into shallow trays of disinfectant before entering the house. Disinfectant may be provided by placing a burlap bag saturated with a standard disinfectant in a low flat box.

3. There should be storm-proof feed hoppers in the runway so as to attract the chicks outside to get the benefit of as much direct sunlight as possible.

**Clean Feed**—Clean feed is the last point in providing sanitary conditions for the growing chicks. The feed must be free from mold and fed in sanitary hoppers or the other points will be of little or no value. The new K. S. A. C. all-mash chick rations have proved very satisfactory. The mash should be self-fed in open hoppers at all times after the chicks are 48 hours old. The mash is well balanced, containing all essential nutrients,

(Continued on page 52)

# COLLEGE NOTES

## AGS HONORED BY PHI KAPPA PHI

The K. S. A. C. chapter of the national honorary society, Phi Kappa Phi, held its annual recognition program December 7, 1928. The Ags elected to membership for the first semester of this college year were:

Hobart P. Blasdel ..... Sylvia  
A. W. Miller ..... Great Bend  
L. W. Koehler ..... Fairmount, Mo.

Students elected to membership for the first semester each year must be in the upper 5 per cent of the senior class in scholarship.

On this annual recognition day Phi Kappa Phi honors the upper 10 per cent of the freshman class of the preceding college year. The following students of agriculture were commended for winning this distinction:

NAME	HOME P. O.	CR. HRS. PASSED	TOTAL POINTS
Fulton G. Ackerman,	Lincoln.....	35	78
John S. Boyer,	El Dorado.....	37	76
Arnold E. Chase,	Manhattan.....	37	89½
Tom D. Dicken,	Winfield.....	29	63½
Ralph F. Germann,	Fairview.....	37	71
Clarence L. Gish,	Abilene.....	34	57
John B. Hanna,	Clay Center.....	37	65½
Alonzo S. Lambertson,	Fairview.....	38	88½
George D. Oberle,	Carbondale.....	35	79
Alma M. Schlehuber,	Durham.....	37	60
Lot F. Taylor,	Ashland.....	37	82
Bruce R. Taylor,	Alma.....	37	74

Each of these 12 students is on the "Honor Roll" of the Division of Agriculture for 1927-'28, although because of an error in a departmental record the name of Ralph F. Germann was omitted from the list as published in the October issue of the Ag Student. Nine of these honor men are enrolled as sophomores in the division this fall. Messrs. Dicken, Gish, and Hanna are not enrolled in K. S. A. C. this semester.

## AGGIE APPLE JUDGERS PLACE SECOND

The K. S. A. C. apple judging team coached by Prof. W. F. Pickett placed second in the contest at Cedar Rapids, Iowa, at the Mid-western Horticultural Exposition. The University of Missouri team won first, 32 points

ahead of K. S. A. C., and Iowa State College was third. The men on the Kansas team were: Leonard W. Koehler of Kansas City, Mo., who was second high individual in the contest; Temple F. Winburn of De Kalb, Mo., who was third; and S. G. Kelley of Seymour, Mo., who was sixth. Four teams were entered in the contest but the Illinois team did not show up.

## AGGIE INTERCOLLEGIATE LIVE STOCK JUDGING TEAM MAKES EXCELLENT SHOWING

The 1928 live stock judging team made a very creditable showing at the big shows this fall with one first and two seconds to their credit which shows real consistency. Prof. F. W. Bell, who coached the team asserts that this team is one of the best teams he ever coached. This is saying a great deal for Professor Bell has never coached a team that placed below fifth.

The members of this exceptional team are:

O. E. Funk ..... Marion  
W. H. Lee ..... Keats  
S. S. Bergsma ..... Lucas  
Edward Crawford ..... Stafford  
I. K. Tompkins ..... Byers  
F. W. ImMasche ..... Saffordville

The team competed in three contests. In the Kansas National Live Stock Show contest at Wichita they placed first with a 97-point lead over the second-place team. Seven teams competed. S. S. Bergsma was high individual of the 35 contestants, with a score of 532 points out of a possible 550. Francis W. ImMasche was second with a score of 531. W. H. Lee was fifth and Edward Crawford, sixth. The team was first in judging hogs, second on cattle, first on sheep, and third on horses.

At the American Royal contest in Kansas City the team placed second with only a two-point margin between them and the top



team, Illinois. They lacked only three points of winning the large silver loving cup permanently as a team must win it twice in succession to hold it permanently. K. S. A. C. won it in 1922, 1924, and 1927. Oklahoma placed third, 33 points behind K. S. A. C. Sixteen teams competed in this contest and the competition was very keen. Edward Crawford was high man of the 80 contestants, with a score of 918 points out of a possible 950. I. K. Tompkins was seventh with a score of 876. The team was first in hog judging, third on horses, third on sheep, and fifth on cattle.

At the International contest in Chicago, K. S. A. C. again placed second with 23 teams competing. D. Williams of Oklahoma was high man of the 115 contestants, with a score of 935 points out of a possible 1,000. O. E. Funk was second with a score of 932; and Francis W. ImMasche, eighth. The team was second on horses, third on hogs, third on cattle, and fourth on sheep. The team won the trophy offered by the Percheron Society of America for the high team in judging Percheron horses.

The following tabulation shows the scores made by the teams competing in these contests; the total scores made by each of the seven teams competing in all three contests; and the total points made by nine teams competing in both the American Royal and the International.

	K. C.	CHICAGO	WICHITA	TOTAL	U. S. PLACING
K. S. A. C.....	4,302	4,532	2,576	11,410	1
Oklahoma .....	4,269	4,567	2,479	11,315	2
Iowa .....	4,191	4,341	2,466	10,998	5
Texas A. & M. ....	4,045	4,259	2,446	10,750	7
Wyoming .....	4,141	4,464	2,426	11,031	3
Colorado .....	4,136	4,454	2,412	11,002	4
Texas Tech. ....	4,245	4,391	2,341	10,977	6
Illinois .....	4,304	4,345	.....	8,649	9
Ohio .....	4,219	4,500	.....	8,719	8
Nebraska .....	4,198	4,439	.....	8,637	11
Missouri .....	4,188	4,384	.....	8,572	12
Purdue .....	4,148	4,496	.....	8,644	10
Minnesota .....	4,119	4,310	.....	8,429	13
Wisconsin .....	4,079	4,333	.....	8,412	14
Michigan .....	4,069	4,289	.....	8,358	15
South Dakota .....	3,766	4,099	.....	7,865	16
Ontario .....	.....	4,372	.....	.....	.....
North Dakota .....	.....	4,328	.....	.....	.....
West Virginia .....	.....	4,320	.....	.....	.....
Kentucky .....	.....	4,311	.....	.....	.....
Pennsylvania .....	.....	4,232	.....	.....	.....
Manitoba .....	.....	4,072	.....	.....	.....
Georgia .....	.....	4,046	.....	.....	.....

When one adds the total scores of the three contests it is found that K. S. A. C. has the highest ranking team in the United States;

when the results of the contests at the Royal and the International are added together K. S. A. C. ranks two points behind the high team, Oklahoma A. and M. The team surely did high-class and consistent judging and made a record of which the institution may be proud.

Besides the judging experience the trip provided much of interest and value to the members of the team. They visited the Longview Farms at Lees Summit, Mo.; they visited Iowa State College at Ames, where they worked on the college live stock; they visited Greeley, Iowa, where they judged the fine Belgians of the Holbert Importing Company; and they visited the University of Illinois, where they had an exceptionally good two-day workout on fat stock and Percheron horses.

#### INTERCOLLEGIATE MEATS JUDGING CONTESTS

The intercollegiate meats judging contest at the International Live Stock Exposition at Chicago marked the successful close of the second year of this form of collegiate endeavor at K. S. A. C. The team competed against five other colleges at the American Royal Live Stock Show in Kansas City and against eight at the International Live Stock Exposition in Chicago.

The team was coached by Prof. D. L. Mackintosh of the Department of Animal Husbandry and was composed of O. E. Funk, Marion; I. K. Tompkins, Byers; S. R. Bellamy, Meade; and Dale A. Scheel, Emporia. A meats team is composed of three men and an alternate. Dale A. Scheel was alternate in Kansas City and S. R. Bellamy was alternate in Chicago.

In the Kansas City contest O. E. Funk was sixth high man in the judging of pork. S. R. Bellamy was third high man on pork and ninth on beef. I. K. Tompkins tied for first place in the judging of mutton and was tenth on beef.

In the Chicago contest the competition was stronger with nine teams entered. K. S. A. C. placed second being edged out of first-place honors by a co-ed team from Nebraska. In the class placing K. S. A. C. placed first in beef with Dale A. Scheel as high man and O. E. Funk sixth; Nebraska placed first in pork

and Illinois first in lamb. In the individual placings two Nebraska girls tied for first with Dale A. Scheel and O. E. Funk following closely at third and fourth.

The scores made by the competing teams in these contests were:

	International	American Royal
Nebraska .....	2,312	.....
Kansas .....	2,249	2,175
Ohio .....	2,248	.....
Illinois .....	2,240	2,272
Iowa .....	2,223	2,229
South Dakota .....	2,208	2,129
Missouri .....	2,174	2,294
Pennsylvania .....	1,990	.....
Oklahoma .....	1,990	1,894

Meats judging is a relatively new phase in college judging contests and as yet has not reached the proportion of some of the other collegiate judging activities. The departments of some colleges are rather skeptical as to the value of this work; however, it fits in exceptionally well with the live stock judging as it correlates animal form with conformation and quality of meat cuts and the relative value of the various wholesale cuts of meat, which are the packer buyer's "yardstick."

### THIRD PLACE TO KANSAS GRAIN GRADING AND JUDGING TEAM

The Kansas Grain Grading and Judging team, coached by Prof. J. W. Zahnley, placed third in the grain grading and judging contest held Saturday, December 1, 1928, in connection with the International Live Stock Exposition at Chicago. North Carolina and Iowa placed first and second, respectively, and there were seven teams in the contest.

The men making the Kansas team were:

Henry C. Abell.....	Riley
Louis P. Reitz.....	Belle Plaine
George J. Caspar.....	Junction City
Hobart P. Blasdel (alt.).....	Sylvia

Henry C. Abell was third high man in the contest and Louis P. Reitz was tenth. The team placed first in identification; fourth in commercial grading; and sixth in comparative placing.

It is deemed a high honor to be able to win a position on an agricultural judging

team from this school. The men that were selected to represent this school were well worthy of this honor as they won their places in keen competition with five other capable men who were trying out. A great deal of credit is due these five men who failed to win a place, for their untiring efforts made a place on the team uncertain.

### STUDENT POULTRY JUDGING CONTEST

Valuable poultry judging team material showed up in the annual student poultry judging contest held Saturday, November 3, 1928, sponsored by the Department of Poultry Husbandry.

There were two divisions in the contest, a junior and a senior division. The junior division was composed of students who had not had the required college course in farm poultry production, and the senior division was composed of students who were enrolled in this basic course in poultry production or who had taken it or approximately its equivalent in college work. There were 64 entries in both divisions, 51 in the senior division and 13 in the junior.

The 11 high men in each division and their prizes were as follows:

#### Junior Division

NAME	HOME	SCORE	PRIZE
Dean McCammon, Oronoque.....		495	\$5.00
Lee H. Albin, Norcatur.....		470	2.50
Louis E. Rufener, Strong City.....		450	1.50
Waldo P. Wheeler, Williamsburg.....		440	1.50
Jay R. Bentley, Ford.....		440	1.50
Harold W. Ellis, Coldwater.....		415	.75
T. R. McCandless, St. John.....		415	.75
John T. Parry, Linwood.....		410	.50
Alvin Morgan, Lebo.....		410	.50
J. A. Ritchie, McLouth.....		400	.25
C. Athol Sayre, Cottonwood Falls.....		400	.25

#### Senior Division

Arnold E. Chase, Manhattan.....	510	\$12.50
E. W. Theiss, Hutchinson.....	510	12.50
R. W. O'Hara, Blue Mound.....	505	4.00
H. D. Garver, New Cumberland.....	505	4.00
H. D. Smiley, Manhattan.....	490	3.00
Neil Durham, Randall.....	490	3.00
Mark M. Taylor, Harveyville.....	480	2.00
W. Edward Wilson, Lincoln.....	475	2.00
G. D. Oberle, Carbondale.....	475	2.00
J. L. Wilson, Geneva.....	465	1.00
A. S. Lamberton, Fairview.....	465	1.00

The two high men in the junior division, Dean McCammon, first, and Lee H. Albin, second, were both coached by Mr. Kenney L. Ford, formerly teacher of vocational agriculture in Norton Community High School, now alumni secretary.

# Growing Apple and Pear Seedlings in the Kaw Valley

M. M. Taylor, '30

Until recent years, more than 90 per cent of the seedling root stocks of apples and pears of the United States were grown in the Kaw valley between Wamego and Perry. The state of Washington is now growing American seedlings and, as the demand is limited, the acreage in Kansas had to be decreased. It is very seldom now that a field has more than 100 acres in it, yet around 1912, F. W. Watson had as high as 650 acres and he was only one of six large growers in the valley at that time.

The following growers produce all the stocks grown in the Kaw valley at this time: W. A. Oliver Nursery Company, Perry; M. L. Taylor Nursery Company, Perry; T. P. Oliver, Topeka; J. H. Skinner & Sons Nursery Company North Topeka; and L. R. Taylor & Sons Nursery Company, Topeka.

As space is limited the stages of seedling production can be touched on only lightly. There are five stages; namely, (1) buying and treating the seed, (2) preparation of land and planting, (3) cultivating and spraying, (4) digging and heeling in, and (5) grading.

The apple seed is usually bought in France or native seed may be purchased. Pear seed comes from China, Japan, and France. The price of apple seed varies somewhat from year to year but averages about 50 cents a pound. Pear seed usually costs considerably more. French pear seed costs \$2.50 a pound, *Usuriensis* seed from China about \$5 to \$6, common Japan or *Serotina* from Japan comes at about \$4, while *Calleryana*, also from Japan, usually is priced around \$7.50 a pound. The seed is shipped in barrels with powdered charcoal mixed all through it. Charcoal serves to take up the water that might be absorbed by the seed and cause it either to mold or germinate.

Immediately after the seed arrives it is fanned, the charcoal being separated out, and then put to soak in water. After soaking, the seed is put on ice and frozen. Freezing serves a two-fold purpose, it breaks the rest period of the seed and holds it back so when

planted, it will all germinate at once. Germination must be uniform and strong or the crop will not be profitable.

Seed bed preparation is very important because some years it may be a limiting factor. Plowing at a depth of 10 to 12 inches either in the fall or spring, the latter being preferable, begins this work. As early in the spring as possible the ground is disked and harrowed. It must then be leveled with a wooden slide. Another disking (light), cultipacking, harrowing, and two slidings follow. The last sliding immediately precedes the drill. The drill which is equipped with small shovels to ridge the row, is similar to a wheat drill except that the rows are 22 inches apart and only four rows are planted at once. The seed is dried in screens exposed to the sun before planting. The rate of seeding is usually 50 pounds to an acre, but varies somewhat with variation in the germination test. The time of planting is about April 15.

As germination starts, cultivation also begins. When the first shoots appear, the ridge is leveled off and then hand raked close to the row so the sprouts can come up without any delay and without being bent. The next operation is wheelhoeing which prevents growth of weeds and also loosens the soil around the young sprouts. Later cultivation is done with either two-row or four-row implements having knives, blades, and "duck-feet" as shovels. Only the upper three inches of the soil is worked because a dust mulch is all that is necessary. The rows are hoed and weeded about four times a year.

Spraying will also be necessary before the seedlings are very large. This is done to kill such pests as leaf hoppers, leaf rollers, flea beetles, and mildew. The sprays used are Bordeaux mixture, arsenate of lead, black leaf 40, and some soap to act as a repellent. Woolly aphis cannot be controlled by spraying but raking the seedlings will expose them to the sunlight which will kill them. Common diseases are root knot, root gall, and crown

(Continued on page 57)

# ALUMNI NOTES

J. Scott Stewart, '22, is engaged in farming and live-stock production on a farm southwest of Coldwater.

J. Farr Brown, '21, is city salesman for the E. A. Thornton Lumber Company of Chicago. His office address is 111 West Washington St.

F. P. Eshbaugh, '26, is promotion salesman for the Tobacco By-Products and Chemical Corporation, Louisville, Ky. His territory extends from Iowa to Southern Colorado.

A. G. Van Horn, '16, has recently received an appointment in the United States Department of Agriculture, Office of Dry-Land Agriculture. He is stationed at Woodward, Okla.

E. M. Litwiller, '24, M. S., '26, of the Department of Home Study Service of K. S. A. C., is to devote one-fourth of his time during 1929 to extension work in vegetable and landscape gardening.

H. L. Lobenstein, '26, assistant county agricultural agent of Atchison county, supervised the planting of 600 acres of apple orchard in his county last spring. He expects to plant 1,000 acres the coming spring.

H. C. Sturgeon, '22, is engaged in general farming near Princeton, Kan. He raises high-class Duroc-Jersey hogs and Jersey cattle. He is proudest, however, of a daughter who has recently become a member of the family.

Earl T. Means, '22, editor of Vol. 1 of The Kansas Agricultural Student, is a pure-bred live-stock farmer near Everest, Kan. His Aggie enthusiasm is as prominent as ever. For example, he has named his farm "Purple K Farm."

Everett J. Price, '19, is manager of the Pawnee Ice Cream Company, Pawnee, Okla.

E. E. Huff, '22, is teaching vocational agriculture in Ponca City, Okla., this being his second year in that position. One of his boys had the honor of being selected as a "junior master farmer of America" at the American Royal last fall.

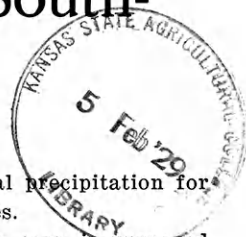
O. T. Bonnett, '18, M. S., '27, is assistant in plant breeding in the Agricultural Experiment Station of Illinois. His work is under the direction of Dr. C. M. Woodworth. He enjoys the opportunity in connection with his work of taking some work toward his doctor's degree. Mr. Bonnett's first experience after receiving his master's degree from K. S. A. C. was in the University of Wyoming.

R. S. Kifer, '23 (M. S., '24, University of Minnesota), is assistant agricultural economist with the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C. He has recently conducted field studies in cooperation with state agricultural experiment stations in Kansas, Iowa, and other states. Mr. Kifer was married last summer to Hilda Black, H. E., '25.

H. L. Collins, '23, passed the civil service examination for statistician and was sent to Illinois to begin work. However, he and Mrs. Collins—formerly Lois Richardson, H. E., '25,—both preferred Kansas and were much pleased when in the spring of 1927 the opportunity came to be transferred to the state statistician's office in Topeka. Much of Mr. Collin's work during recent months has been covering western Kansas with a "wheatometer" and a "pigometer." He will have his report ready for the Washington office soon. By the way, Hubert is another proud alumni Dad.

# Broom Corn Production in Southwestern Kansas

Donald J. Martin, '29



"Kansas Grows the Best Wheat in the World," is a familiar slogan to all Kansans. As Kansas ranks second in the production of broom corn the slogan "Kansas Brush for Brushes and Brooms" could well be supported. While broom corn can be produced in almost any state in the Union, it is best adapted to a warm sunny climate, and the best quality brush is produced only under the most favorable conditions. Southwestern Kansas has a climate and soil that produce high-quality broom corn.

For the farmers of southwestern Kansas, broom corn provides a crop that fits into the organization of the farm business. It provides a means of diversification with wheat and grazing and furnishes a profitable source of cash income. Broom corn can be produced in the sandhill country on land that is too sandy for wheat production. Like other sorghum crops it is drouth-resistant and produces good yields year after year.

Stevens county leads in the production of broom corn in Kansas with an average yearly production for the last 12 years of 2,600,000 pounds. Kearney county is second with 1,200,000 pounds. The average yearly production of the state for the same period was 10,700,000 pounds. The average acreage of the state during this period was 32,736 acres. Broom corn yields between 300 and 400 pounds per acre in Kansas.

The average yearly production of the United States is 52,500 tons. Dwarf broom corn constitutes between 50 and 70 per cent of this total annual production. In southwestern Kansas standard broom corn is becoming increasingly important.

The soils upon which broom corn is grown in the southwestern counties of the state are in general reddish brown, fine, sandy loam soils that are friable and easy to cultivate. The climate is characterized by a limited and variable rainfall of irregular seasonable distribution, low humidity of atmosphere, a wide daily range of temperature (hot days followed by cool nights), and high wind ve-

locity. The average annual precipitation for this area is about 24 inches.

The seed bed for broom corn is prepared in the same way as for corn or the grain sorghums. The seed is planted with a lister at the rate of 2 to 3 pounds per acre. Planting begins about April 15. If a large crop is put in it is planted at 10-day intervals to lessen the rush at harvest time. Cultivation of the crops is similar to that of corn or the grain sorghums, the crop being cultivated two or three times.

Harvesting is the most important part of producing the crop, as the quality of the brush depends a lot on harvesting at the proper time. The brush should be harvested when it has reached the stage where the natural green color extends from the tip of the fiber to the base of the head. This usually occurs about the time the seed is in the milk or the thin-dough stage. Standard and dwarf broom corn are harvested in different ways. The standard is bent over and the brush cut off; the dwarf is jerked or pulled from the upright stalk. Harvesting is the most expensive part of producing the crop as it is all hand labor. One man can pull about one acre per day. The usual wage paid is \$3 a day and board.

Curing is also of great importance in producing a good quality of brush. Most of the broom corn in Kansas is cured in long ricks. It should be cured rapidly and not exposed to strong sunlight if it is to retain the natural green color. Sheds are used to quite an extent where standard broom corn is grown. The shed eliminates the danger of wet weather and also usually produces brush of better quality.

The seed should be threshed from the brush soon after it is harvested. In threshing the heads are placed on a belt which carries them to a revolving cylinder; the belt passes in front of the cylinders and parallel to them. The seed is stripped from the brush

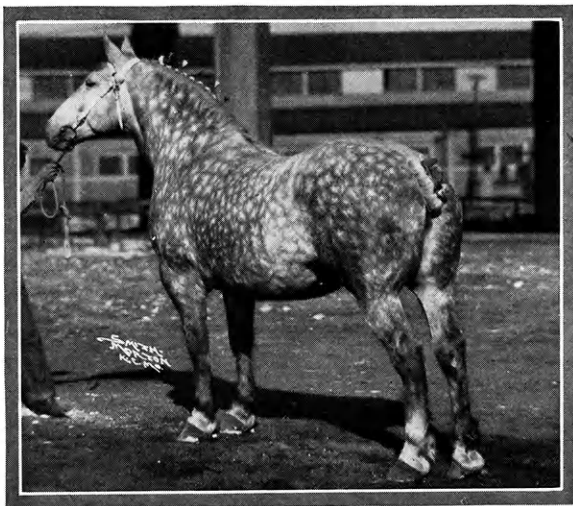
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# K. S. A. C. Horses at American Royal

C. Porter McKinnie, '30

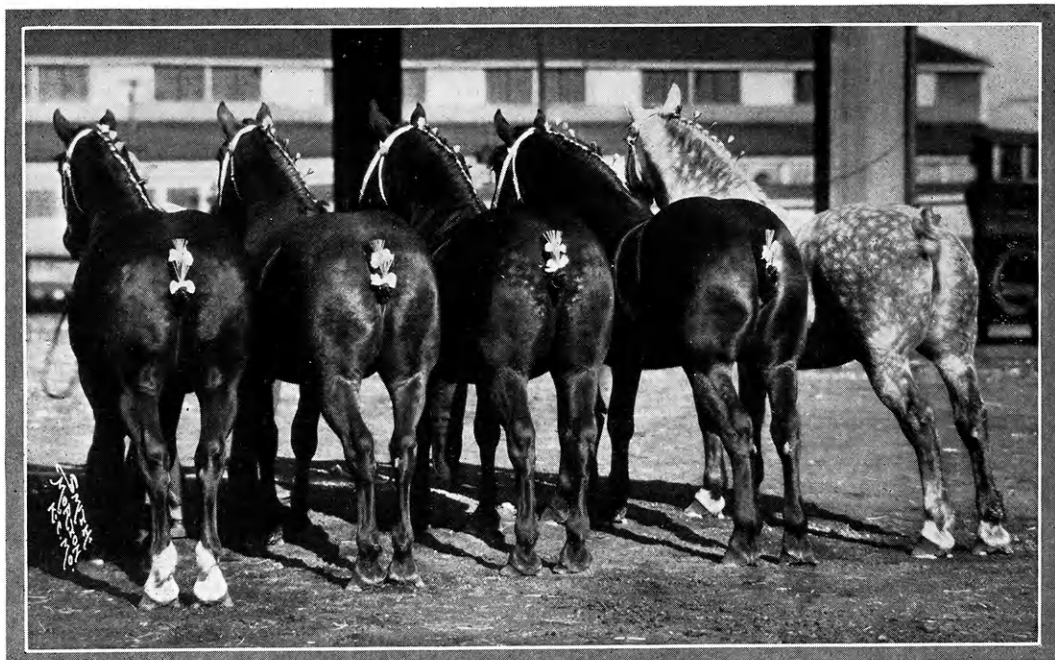
This year has been a most successful one for college horses at the American Royal. They have met the strongest competition they have had in many years. There were 10 exhibitors from eight states; namely, Minnesota, Ohio, Illinois, Missouri, Nebraska, Oklahoma, Iowa, and Kansas. Success is attested by more premiums won than were won in any previous year.



ALLINELL—RESERVE GRAND CHAMPION,  
AMERICAN ROYAL, 1928

The Percherons won one championship, seven firsts, four seconds, one third, one fourth, and one fifth place. The Belgians won four championships, seven firsts, one second, three thirds, one fourth, and two fifths.

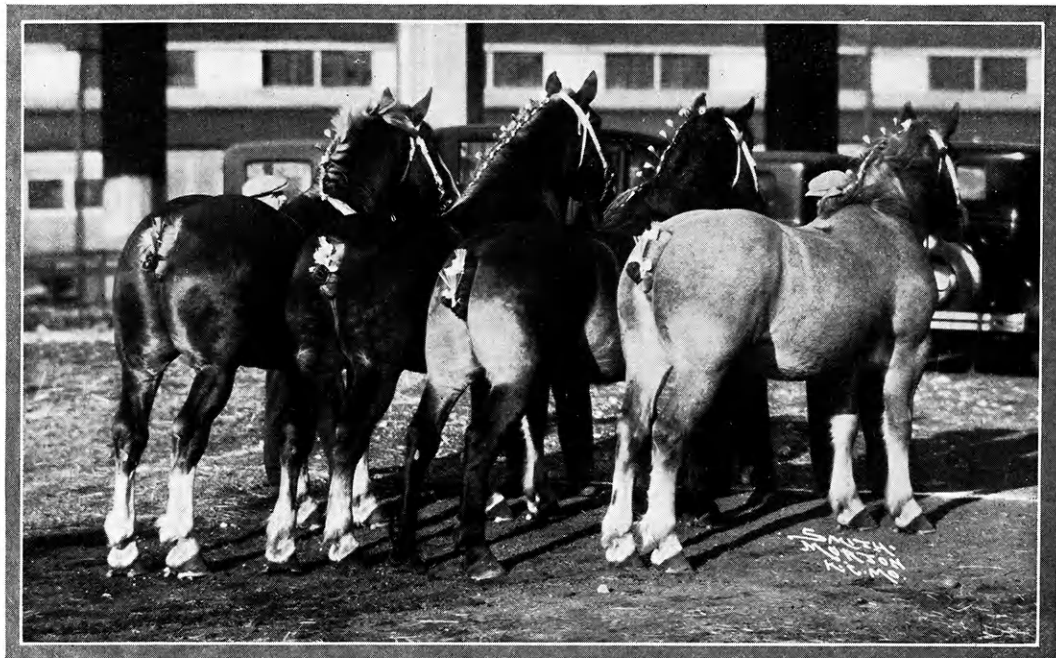
All the Percherons shown were under four years of age. The following stallions were shown and won places: Oak Forest Supreme was third in the two-year-old class;



PRIZE WINNING PERCHERONS

From left to right: Lauregot, Edith, Jewel, Jessie, Allinell.

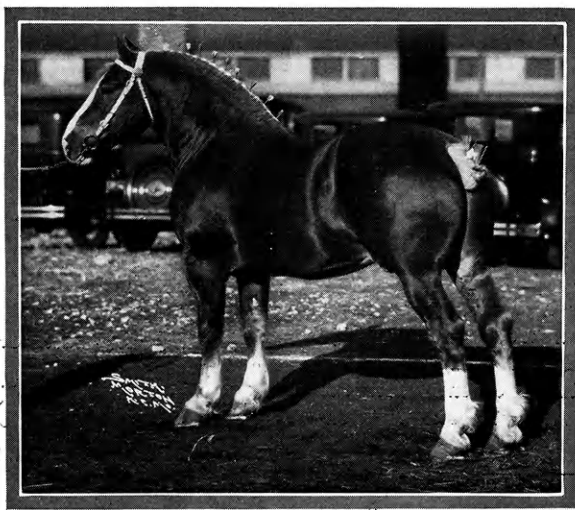
Lauregot was second in the yearling class; Laura, a mare that has produced a number of winners for the college. Margot, owned Kansas Egot was first and Lauregot II was



K. S. A. C. BELGIANS, BEST STALLION AND THREE MARES ANY AGE  
Left to right: Colgodine's Farceur, College Elaine, Juludine, Farsadine.

fifth in the stallion-foal class. The mares which were shown and included in the winnings were: Allinell, first in the three-year-old class; Jewel and Jessie, second and fourth in the two-year-old class; Edith, first in the yearling class; and Edna, first in the mare-foal class.

Allinell won the Reserve grand champion ribbon. It is interesting to note that Allinell's grand-dam is V.



COLGODINE'S FARCEUR, GRANDCHAMPION BELGIAN STALLION, WINNER OF THE YSER CUP

by F. E. Murphy, who won senior and grand championships over Allinell, has been a consistent winner at the fairs this fall. She was also International grand champion in 1927.

The following group prizes were won by Pereherons: Second in the get-of-sire class, second in the stallion and three-mares class, first in the class of best three mares.

first in produce-of-dam, first in the class, stallion and three mares under three. All the animals shown, except one, were sired by stallions secured through the courtesy of E. L. Humbert & Son, Corning, Iowa.

All the Belgians shown were under three years of age. Colgodine's Farceur won first in the two-year-old class, and J's Colgodine and F's Colgodine won third and fourth in their class of stallion foals. Of the mares shown, College Elaine and College Farzella won first and third in the two-year-old class, and Juludine and Farsadine won first and second in the yearling class.

Colgodine's Farceur was made junior champion and won over Vidas De Egot, many times champion, owned by C. E. Jones, Livermore, Iowa, for grand champion stallion. Colgodine's Farceur's three-quarter-brother was grand champion at the American Royal in 1926 and Vidas De Egot was grand champion stallion in 1927. Juludine, the first prize yearling mare, was made junior champion mare.

Success in the group classes is very much coveted because the groups must have uniformity and be very good all the way through to win. The college Belgians won places in the following classes: First and fifth in the get-of-sire, third and fifth in the produce-of-dam, first in each of the stallion and three mares, best three mares, and stallion and three mares under three.

Colgodine's Farceur won two trophies, the Belgian Horse Association Special, which was a set of sterling silver given to the grand champion Belgian stallion, and the Yser cup given by the Societe Royal Le Cheval D Trait Belge of Belgium to the best stallion or mare at the show. The Yser cup symbolizes American help in food to Belgium during the German occupation.

The Belgians from which the show stock were selected have been bred by the college for a number of generations. They are used for class work to a large extent. All the Belgians shown were sired by one stallion, Colgodine.

C. D. Tolle, '24, is expecting to receive his doctor's degree from Cornell University next spring.

## HEALTH STICKS TO CLEAN CHICKS

(Continued from page 43)

essential vitamins, and a good substitute for green feed. There is no danger of the chicks overeating if there is an unlimited supply of the mash before them at all times. The composition of these mashes for each of three eight-week periods is indicated in the following table:

### K. S. A. C. All-Mash Chick Ration

	AGE OF CHICK		
	1-8 Weeks	9-16 Weeks	17-24 Weeks
Ground yellow corn	40 lbs.	50 lbs.	55 lbs.
Ground wheat	15 lbs.	15 lbs.	15 lbs.
Ground oat meal	15 lbs.	.....	.....
Ground oats	.....	15 lbs.	15 lbs.
Meat scraps	14 lbs.	10 lbs.	5 lbs.
Dried buttermilk (a)	5 lbs.	5 lbs.	5 lbs.
Alfalfa leaf meal	5 lbs.	.....	.....
Mineral mixture (b)	5 lbs.	5 lbs.	5 lbs.
Cod-liver oil	1 lb.	.....	.....
	100 lbs.	100 lbs.	100 lbs.

(a) If milk is available to feed as a beverage omit the dried buttermilk and add 5 pounds more of corn meal.

(b) The mineral mixture consists of 2 lbs. bonemeal, 2 lbs. fine oyster shell, and 1 lb. fine salt.

There should be 4 feet of feeder space for 100 chicks or approximately  $\frac{1}{2}$  inch per chick. A sanitary feeder with some means of preventing the chicks from tramping in the mash should be used.

The all-mash method of feeding chicks has been quite successful and is a great saving of time and labor. If the pullets reared under these sanitary methods are free from worms when they are placed in the laying houses about September 15, they will not be so susceptible to winter ailments such as colds, roup, and kindred diseases.

**Note.**—Blue prints of equipment for chick raising discussed in this article may be secured of the Department of Rural Engineering, K. S. A. C., Manhattan, Kan. Order by number.

No. 77-728. Indoor self-feeder with pivoted and adjustable reel, a simple and satisfactory trough for feeding "All-mash Chick Ration," 10 cents.

No. 77-7211. Small storm-proof self-feeder suitable for use in sanitary runway, 10 cents. (See "B" of illustration.)

No. 77-725. Outdoor storm-proof self-feeder for feeding "All-mash Chick Ration" on the range, 10 cents.

No. 77-741. Sanitary runway with hail-screen base, 10 cents. (See "B" of illustration.)

No. 72-7115. Kansas portable brooder house, 20 cents. (This number presents plans used in "A" of the illustration.)

Elmer F. Hubbard, '28, is graduate assistant in dairy manufacturing, University of Minnesota, St. Paul.

# Hard Red Winter Wheat Research Conference

John H. Parker

Professor of Crop Improvement

On November 8, 1928, about two hundred of the leading wheat experts of the southwest met at the Kansas State Agricultural College to hear of the needs of the states of Kansas, Nebraska, Colorado, Oklahoma and Texas as to research on the problems of wheat improvement, production, and marketing. The need of such a conference was called to the attention of the group by Pres. F. D. Farrell of K. S. A. C. who opened the morning session with a brief but very clear statement of the importance of the wheat industry in the southwest and of the necessity of meeting successfully the competition of the spring wheat states, Canada, and other surplus wheat-producing countries, especially Australia and Argentina.

Other papers on the morning program were as follows:

E. H. Hodgson, Farmer, Little River, Kan.

"What a wheat research program will mean to the wheat farmer."

C. R. Ball, Principal Agronomist, Office of Cereal Crops and Diseases, United States Department of Agriculture.

"Status and prospects of the program of the United States Department of Agriculture in improving Hard Red Winter Wheats."

H. R. Tolley, Assistant Chief, in Charge of Research, Bureau of Agricultural Economics, United States Department of Agriculture.

"Research work of the Bureau of Agricultural Economics on quality as a factor in marketing wheat."

H. M. Bainer, Director, Southwestern Wheat Improvement Association, Kansas City, Mo.

"Research as a basis for a wheat improvement program."

C. C. Cunningham, Farmer, President, Kansas Crop Improvement Association, El Dorado, Kan.

"Why the southwest needs improved wheat varieties."

C. M. Hardenbergh, President, Southwestern Milling Company, Kansas City, Mo.

"How an enlarged research program may help the millers in the solution of some of their problems."

Sam McDonald, Vice President, Continental Baking Company, New York City.

"The importance of quality in Hard Red Winter wheat flour."

President Farrell appointed two commit-

tees at the close of the morning program, one on research program and one on finance.

As the morning program had moved along without a hitch, a little time remained before lunch, and President Farrell called on Dr. Alonzo E. Taylor, one of the directors of the Food Research Institute of Stanford University, Calif., for a few remarks. Doctor Taylor spoke in an informal but very forceful manner and called the attention of the conference to some of the export problems and practices as they affect American wheat growers, millers, and members of the grain trade.

Luncheon was served at the college cafeteria. An exhibit, arranged by the Departments of Milling Industry, Agronomy, and Agricultural Economics of K. S. A. C., illustrating some phases of wheat research in progress at the Kansas Agricultural Experiment Station was a feature that interested the visitors during the noon hour and between sessions of the conference.

The afternoon meeting was devoted to a detailed consideration of state programs of wheat research. Dr. A. F. Woods, director of scientific work in the United States Department of Agriculture, presided, and called on the directors of the agricultural experiment stations in each of the five states to present their research programs, including statements of problems needing attention and plans for further research.

Between the time of adjournment of the afternoon session of the conference at about 4 o'clock, and the banquet at 7 o'clock, the two committees of major importance to the work and accomplishments of the conference met in Waters Hall and prepared their reports, which were presented at the evening meeting of the conference held at the Wareham Hotel.

More than 150 members of the conference attended the banquet, which was served in the Grill room of the new Wareham Hotel. Mr. J. C. Mohler, secretary of the Kansas



State Board of Agriculture, served as toastmaster at the banquet and maintained his reputation as a master of good humor and of any situation in which he is placed. Sen. Arthur Capper was an honor guest at the banquet and talked informally but very sincerely, telling of his genuine interest in the problems of the wheat farmer and expressing his willingness to render any possible aid when funds for the proposed enlarged re-

homa City, and Dr. Alonzo E. Taylor of the Food Research Institute. Mr. Williams emphasized the need of making farmers see that new varieties, new practices, and new methods would pay before expecting them to adopt these fruits of research. Dr. Taylor told the members of the conference something of the work of the Food Research Institute, especially of its studies of foreign markets for American wheat and flour. He urged all members of the conference who had anything to do with the export business to take steps to put our products on a quality basis, just as has been done with several other commodities.

The members of the conference were entertained at luncheon by some musical numbers presented by Prof. and Mrs. H. Miles Heberer of the Department of Public Speaking. The Wareham Hotel orchestra, directed by June Layton, played during the banquet, Miss Virginia Maupin, sister of Rex Maupin of Ag Fair Follies fame, played a group of violin numbers, and Mr. Horatio Farrar of the Department of Music delighted the members of the conference with a group of songs.

Brief abstracts of the reports of the research program and finance committees are given in the following paragraphs:

The research program committee reported that there is an urgent need for more research work relating to Hard Red Winter wheat. This is indicated by declining soil fertility, increasing damage from plant diseases, and changing economic conditions which have brought on new problems. Some of the specific problems which in the judgment of the committee seemed especially to merit attention are certain soil management and tillage problems that have been introduced or emphasized by the combine, such for example as the utilization of straw; the use of the one-way disk or wheat-land plow; the control and conservation of moisture and the relation between water stored in the soil and yield; the control of Hessian fly, stinking smut, and foot rots; the production of better varieties, especially with reference to quality, early maturity, tendency to lodge and shatter, resistance to various insects and diseases, and winterhardiness; such economic problems as credit and storage facilities, and the need for

(Continued on page 62)



MAP SHOWING LOCATION OF AGRICULTURAL EXPERIMENT STATIONS (X) CONDUCTING RESEARCH IN WHEAT IMPROVEMENT IN THE GREAT PLAINS

This map of the Great Plains of the United States further shows: (1) The Hard Red Winter wheat region; and (2) the Northern Spring wheat region. For the ten-year period, 1918 to 1927, inclusive, the average annual production of the Hard Red Winter wheat region was 249,000,000 bushels; of the Northern Spring wheat region, 186,000,000 bushels.

search program were requested of the Congress of the United States.

Other speakers at the evening session of the conference were Mr. Carl Williams, editor of the Oklahoma Farmer-Stockman, Okla-



# FARM NOTES

## GOOD CARE AND A BALANCED RATION PAY

Good care and a balanced ration are the most profitable means of producing pork for the market. Four years ago, in an effort to prove to my father that a balanced ration was the most profitable method of feeding hogs, I selected four of the smallest shoats from a lot of 50, and penned them alone where I might give them special care. The pen in which these four hogs were placed was located on clean, well drained soil, free from diseases and worms. For protection they had a warm but well ventilated shed with a board floor. I took special care that these hogs had clean, fresh water at all times and the balanced ration I used included tankage and corn with some skimmilk.

The 46 shoats my father was feeding were allowed to run in a much larger lot, their protection was poor, the water was usually taken from a large reservoir tank, and was not fresh and often very cold. The ration consisted of all the corn they could eat, some skimmilk, and garbage from the household.

These pigs averaged about 50 pounds each when the experiment started and 150 days later when the hogs were sold the four which I had been feeding averaged 310 pounds, while the 46 my father had been feeding averaged 270 pounds. We had both kept records of value of feed consumed by the hogs and in comparing results we found that the hogs in both lots had consumed the same amount of feed in value but the one lot with a balanced ration and better care produced 40 pounds more pork per head. —R. E. B., '29.

## HERBAE-MIRA, THE MIRACLE GRASS

A new and so-called lawn grass is being sold under the name of Herbae-mira, which means miracle grass. There is no miracle about this grass, and it is simply a mixture of some of our most common grasses. A number of samples of this grass have been analyzed in the

seed laboratory of the State Board of Agriculture at Manhattan and all were similar in composition.

One of the latest samples analyzed was made up of approximately the following grasses: Timothy, 15 per cent, meadow fescue, 50 per cent; rye grasses, 20 per cent; red top, 5 per cent; and 5 per cent of weed seed and foreign material. Such a mixture of grass seed can be bought for 15 to 25 cents a pound, but promoters have given this mixture of grass the name of Herbae-mira and are selling it as high as \$1.50 a pound.

Herbae-mira is sold for a lawn grass, but there is not a single lawn grass in the mixture. The grasses which the mixture contains are those which start quickly and look well at first, but they will not make a fine turf and stand up under close mowing, which is required of a lawn grass.

The American Seed Trade Association through its attorney, Curtis Mye Smith, has been trying to catch the Herbae-mira salesmen for some time, but has been unsuccessful because of their constantly changing their location and office. The men selling this lawn mixture have been operating throughout Kansas under the names of Willshire Lawn Improvement Company, Zenith Lawn Accessory Company, and the Forrest Lawn Improvement Company. —H. R. B., '30.

## THE AMERICAN ROYAL LIVE STOCK SHOW

For one whole week the American Royal Live Stock Show of 1928 was a place of nation-wide interest among all live stock breeders. Never before had such keen competition existed between the pick of the herds, flocks, and stables. Live stock from all parts of the United States was represented. They were there to compete for the highest honors and there was no place for the scrub or inferior animal. Every breeder had his particular breed in the best condition and showing to

the best advantage. There was type, quantity, and quality. All were there in a vast assembly of blooded live stock.

About the Royal building there was a continuous hum. Each and every one was there for a purpose. Visitors flocked in. They crowded about this, then that herd, all admiring the grand array before their eyes. Every lover of pets had to see the dog and cat show. Many were interested in the machinery exhibits, not to speak of the many aisles of educational exhibits which filled every nook and corner.

The morning program was taken up in judging of the various classes and divisions of live stock; the afternoon by the matinee horse show and the evening by the regular horse show. A new feature was always added which gave a most interesting and entertaining program.

Every breeder of live stock was given the opportunity of his life to see the present-day type and to take home and profit by what he saw. Everyone went away marveling at what he saw and so ended the American Royal of 1928, an event which set a new mark in the history of live stock production.

—R. L. R., '30

#### AS COLORADO SEES KANSAS

It remained for a Colorado writer whose mark appeared recently in a Denver publication, to say something about Kansas that has needed saying for a long time. Here it is:

Papers had a lot to say, sneerin' like at Kansas; welt it to 'em every day, chuckin' fun at Kansas. Air just full o' slander darts, from the busy eastern marts, 'nuff to break the people's hearts, over there in Kansas.

Say that's where cyclones are born, on the plains o' Kansas; every word a word o' scorn fur the folks in Kansas; hoppers darkenin' the sun, dozen of 'em weigh a ton, seem to think it's lots o' fun, crackin' jokes at Kansas.

Now it comes their turn to laugh, them 'ar folks in Kansas; givin' easterners the gaff 'bout affairs in Kansas. Fields a bulgin' out with wheat, corn fur all the world to eat, other crops that can't be beat, over there in Kansas.

Trains a haulin' out the stuff from the

plains o' Kansas; railroads can't git cars enough fur to empty Kansas. Ort to see the farmers grin, stroke the lilacs on their chin, as the cash comes rollin' in, over there in Kansas.

Women singin' songs o' glee 'bout ol' fruitful Kansas; babies crowin' merrily everywhere in Kansas. Purty gals a buyin' clothes, toggin' out from head to toes. Style? You bet your life she goes, over there in Kansas.

When the cares o' day are done on the plains o' Kansas, an' the kids begin to yawn, sleepy like in Kansas, farmer wipes his glasses blurred, reads a chapter of the Word, then kneels down and thanks the Lord that he lives in Kansas.

—Emporia Lyon County Times.

#### THE INTERNATIONAL LIVE STOCK EXPOSITION

During the latter part of November and the first part of December there is held annually at Chicago the International Live Stock Exposition and Hay and Grain Show. To those who have never attended the International it is hard to picture the interest taken by the men who have live stock or grain exhibited there. It is also hard to picture the interest displayed by the onlookers during the judging of the different classes. These onlookers are for the most part people with an agricultural interest and a great many of them are actual farmers.

In a show of this kind the farmer is king of the situation. College farmer students certainly felt as if part of the satisfaction was theirs as those men of the same vocation exhibited in the ring many fine cattle, typy horses, the best of sheep and hogs, and bushels and bushels of wheat, corn, rye, oats, barley, and other crops. The exhibits and classes of the show presented abundant evidence and justification of pardonable pride.

In addition to the different classes of live stock and grain competing for honors, there are several other features that are worth while. Among these is the work of the 4-H Clubs and junior live stock feeders. The animals shown by the 4-H Club boys and girls would compare favorably with those shown by more experienced exhibitors. Not only is this good training for the boys and girls but

it also makes the prospects for farming in the future very bright. These young people are developing an interest that will cause them to go ahead and prepare themselves in the best way possible for the vocation of farming.

The intercollegiate judging contest in both live stock and grains develops a keen interest among the colleges that are entered. The men who make the team have an invaluable training that few get. In addition to the advantage just mentioned there are the acquaintances that are made with different college students. All of these things are a great help to the individual as well as to the school they represent.

These are just a few of the advantages that a person can derive from a show of this kind. To appreciate the importance and vastness of the show one must be there and see for himself.

—H. P. B., '29

#### A WHEAT STRAW AND A CORN STALK MARKET

Would the Kansas farmer like to sell his wheat straw for \$15 an acre and his corn stalks for \$12 an acre? If so, he may be able to do so in the near future.

Senator Thomas P. Schall of Minnesota has introduced a bill in the present congress providing for a million-dollar appropriation for a government owned and operated paper mill in Kansas, the mill to be turned over to private ownership when proved a success. The exact location in Kansas will be left to the Kansas delegation, according to Senator Schall.

Experiments by the United States Department of Agriculture made possible by a \$50,000 appropriation during the last session of congress, have shown that paper, including print paper, can be made from corn stalks, wheat straw, and other straw. The cost of manufacture is between  $1\frac{1}{2}$  and 2 cents per pound and the price realized by the farmer would be about \$15 an acre for his wheat straw and \$12 an acre for his corn stalks. The proposed mill would handle the straw and corn stalks from an area of 1,000 square miles. It would require 100 such mills to supply the paper imported annually into this country so there would no doubt be a market

for the paper. It is doubtful, however, if such a project would be successful in the combine area where the straw is left in the field, but for the binder area and the corn belt the proposition looks promising. It is probable that the removal of the corn stalks for such a purpose would also aid in combating the corn borer. The project at least merits a fair trial and if proved a success will be a boost to the Kansas farmer.

—L. S., '31

#### GROWING SEEDLINGS IN THE KAW VALLEY

(Continued from page 47)

gall. Aseptic grafting knives prevent their transmission to the unions in grafting.

The seedlings will have developed long roots by October. These roots may be either branched or straight. The average length of roots the field over will be about 10 inches. About October 25, digging (usually spoken of as cutting seedlings) begins. This is done with a U-shaped digger running about 15 inches deep and being about 10 inches wide. This is equipped with a lifter which raises the seedlings as it passed under them. They are pulled by hand, tied in bunches, tops cut off and then heeled in so the leaves will sweat off and also in order that the seedlings may become fully dormant before grading.

About the first week in December, the seedlings are taken out of the bed, hauled into the grading and storage house and the leaves shaken off. They are then carried into another room and graded. First the number-one-straight grader takes out all seedlings that caliper  $3/16$  of an inch and up for all the upper 8 inches of the root. Below it can taper on out to the end. One hundred are put in a bunch. What is left goes to a number-two-straight grader who takes out all seedlings having a caliper of  $2/16$  to  $3/16$  of an inch down 6 inches from the collar. There are 200 in these bunches. The number-one-branch grader gets them next and takes out all well branched seedlings having a caliper of  $3/16$  of an inch and up. There are 100 in a bunch of this grade. The remainder goes to a number-two-branch grader who picks out a 200-bunch having all well branched seedlings with a  $2/16$  to  $3/16$  of an

inch caliper at the collar. A special grade is next selected which contains 100 seedlings having 3/16 of an inch caliper on the upper 6 inches of the root. The number-one- and number-two- "straights" are used for piece-root grafting. Number-one- and number-two-branched are used for budding or for whole root grafting. If a number-three-straight grade is separated it is packed 200 in a bunch with a caliper at the collar of less than 2/16 of an inch and these are used in the east for budding. The special grade is generally used for whole root grafting. Pear seedlings are graded in a similar manner but fewer grades are made.

### POWER FARMING IN SOUTHWESTERN KANSAS

(Continued from page 37)

gaining much favor. It may be used as a stubble cultivator before sowing wheat the year after summer fallow or more properly as a summer fallow tool. When equipped with 8- or 10-inch duck foot shovels it is a rapid and efficient means of killing small weeds without pulverizing or disturbing the surface of the soil. When used this way one man can easily cover 80 acres a day or more. These shovels may be replaced by two 8-inch or four 6-inch cultivator shovels and the implement may then be used to prepare a seed bed for wheat, or loosen the ground to conserve moisture before plowing. It is also a cheap quick method of killing volunteer wheat and has been adapted to the cultivation of intertilled crops.

Another implement recently gaining in popularity is the lister or deep-furrow drill. This plants the wheat at the bottom of a 4- to 6-inch furrow thrown out by two discs forming a small ridge between each row of wheat. These ridges serve as protection from winter killing and hold any snow or moisture in the furrow where it may be available to the wheat. The ridges also help prevent soil blowing during the winter but may be harrowed down in the spring to make the use of the combine more convenient. A five-year test at the Montana Agricultural Experiment Station showed an average increase of five bushels per acre in yield and 35 per cent less

winter killing when the lister drill was used as compared to the common drill.

The general trend of investigations seems to indicate that the recent up-trend of prosperity has been due largely to the development of power farming and improved machinery. A comparison made recently by Prof. W. H. Sanders of the Department of Agricultural Engineering shows this supposition to be correct. In the portion of his data which follows only one high, one low, and one medium state will be compared with Kansas because of space limitations.

	H. P. PER MAN	VALUE OF MACHINERY PER MAN	VALUE OF CROPS PER MAN
The Dakotas .....	14.0	\$950	\$1,800
Kansas .....	10.5	670	1,570
Connecticut .....	5.0	350	1,390
Alabama .....	6.0	100	495

Kansas ranks fifth in horse power per man and also fifth in value of crops per man. Evidently there is a close correlation between the power available, machinery used, and crops produced and southwestern Kansas is more dependent upon this relation than any other part of the state.

### BROOM CORN IN SOUTHWESTERN KANSAS

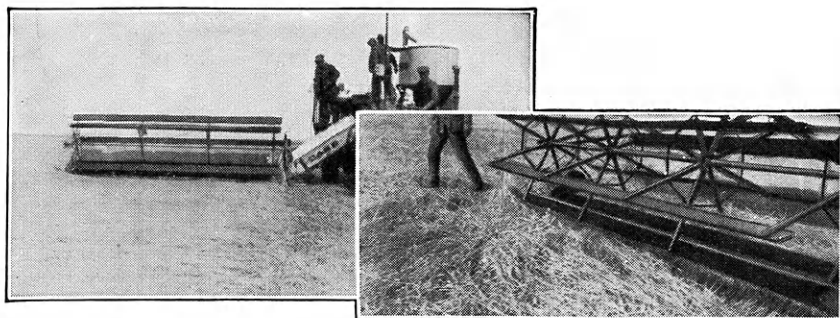
(Continued from page 49)

as it passes along and the brush is deposited on a table beyond the cylinders.

The next step in preparing broom corn for market is baling into bales of about 350 pounds. The brush is taken up in small armfuls and butted against a board or table so that all of the butts are even. It is then placed in the baler with the butts set firmly against the end of the baler. The butts of the next armful are placed against the other end of the baler. This process is continued until the baler is full. A horse is then hitched to the sweep of the baler and the bale is pressed into shape and the wires fastened. After baling the bales are hauled to a warehouse or stored in a dry place until marketed.

The brush can be marketed to best advantage in carload lots, because of the difference in freight rates between full cars and smaller cars. The brush runs about six bales to the ton and from 10 to 12 tons to the carload.





## Not Only Fair Weather Machines

**A**S a farming risk, weather loses much of its terror on farms equipped with Case machines. Take, for instance, the extreme case of Fred Stewart, of Stewart Valley, Sask.

Last year Mr. Stewart had 160 acres of wheat that he was unable to cut before winter set in. Early snows covered the uncut grain to a three-foot depth. Early spring rains completed the ruin, flattening the grain to the ground. The mess looked so hopeless that Mr. Stewart burned 80 acres of it.

In May, nearly nine months after the regular harvest time, he was inspired to try a Case Combine on the remaining 80. To his amazement and delight, the machine picked up, harvested and threshed his apparently ruined crop, giving him twenty bushels to the acre of saleable grain.

Case machines are not only fair weather machines. They perform efficiently in bad as well as good conditions. They enable their owners to overcome natural risks, do better and more timely work and make more money.

**J. I. CASE T. M. CO., Inc. Racine, Wis.**



Established 1842

*Farm Machines  
of Outstanding  
Quality—*

Tractors  
Threshers  
Combines  
Skid Engines  
Hay Balers  
Silo Fillers  
Grain Drills  
Field Tillers  
Grand Detour  
and E. B.  
Plows and  
Tillage Tools  
Grain Binders  
Haying Machinery  
Corn Machinery  
Cotton Machinery  
Manure Spreaders

# CASE

**QUALITY MACHINES FOR PROFITABLE FARMING**

## *"Wyandotte" - 30 Years Young*

Thirty years of experience in the manufacture of all kinds of cleaning materials are to be found in every pound of WYANDOTTE SANITARY CLEANER AND CLEANSER.

This experience, plus constant research and experiment, explains why



gives dairymen such complete sanitary protection at so low a cost.



*"Wyandotte" cleans clean*

The J. B. Ford Company

Sole Mfrs.

Wyandotte, Michigan

In general, Kansas farmers market their broom corn by consigning to a commission firm, selling to a buyer of some manufacturing plant, or selling in the street market. Wichita is the principal terminal market in Kansas. The principal country markets are Liberal, Elkhart, and Syracuse.

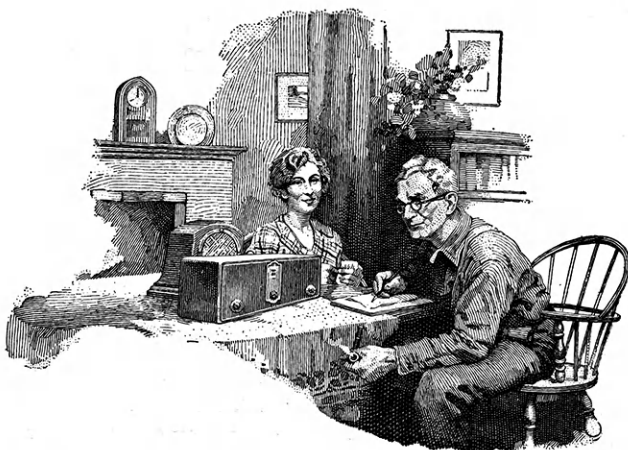
In general the price of broom corn depends on the supply of brush available and the demand for the brush to be used in the manufacture of brooms and brushes. It has practically no value for other purposes, the stover being too dry and pithy to be of value as feed. Because of these facts the value of the crop depends on the market price of the brush. The price to the grower is governed largely by the quality. The demand is fairly constant as the increase in population almost offsets house cleaning requirements being supplied by vacuum cleaners and other devices of like nature. A study of price curves and production curves show that price follows production very closely. When production is large the price of all grades falls very low, and when production is low a great increase in price takes place. As demand for brooms is likely to remain fairly constant, price can be controlled largely by control of production.

The cost of harvesting, threshing, and preparing the brush for market are high because of the large amount of hand labor required. The average cost of harvesting, threshing, and baling is estimated at about \$60 a ton. To make the crop profitable the growers figure that they must sell their brush for at least \$100 a ton. The usual price of the brush ranges from \$90 to \$160 per ton, the average being around \$120.

## THE IMPORTANCE OF WHEAT IN KANSAS

(Continued from page 41)

The slogan, "Kansas grows the best wheat in the world," is not merely a catchy phrase but expresses the fact that Kansas actually does produce not only as high a quality of wheat as is to be found on the market but also a large proportion of high-quality wheat.



## Headwork is Easier With Electricity

“**U**SE your head and rest your hands” is a maxim which has helped many a man to carry an unpromising farm to success.

With most of the trying handwork and backwork done by G-E motors and other electric equipment, the farmer has time to do the better part of his planning and constructive work before he is tired out.

Lights, running water, milkers and washing machines of themselves earn farming profits. But it is the help that electricity brings to *better management* that is the real foundation of success. The G-E monogram assures you that this help shall not fail.

*Tune in on WGY (Schenectady) KOA (Denver) KGO (Oakland)  
for the General Electric Weekly Farm Program.*

### Ask Your Power Company



If your farm is on or near an electric power line, ask the power company for a copy of the new G-E Farm Book which explains more than 100 uses for electricity on the farm.

# GENERAL ELECTRIC

**WHEAT RESEARCH CONFERENCE**

(Continued from page 54)

additional protein and inspection laboratories in order to facilitate the reflection of quality premiums to individual farmers; and such agricultural engineering problems as removal of excess water from wheat on or near the farm, the relation of type and size of bin to heating of damp wheat, and certain mechanical and power requirements for preparation of the ground and harvesting. The committee went on record to the effect that an understanding of a given phenomenon is often as important as a demonstration of the phenomenon itself, and hence that the need for fundamental research in relation to these problems should not be neglected.

The program committee estimated that at least \$300,000 a year would be needed to study these problems effectively. The committee recommended the appointment of a permanent Wheat Research Committee consisting of representatives from the allied industries, the agricultural experiment stations of the five principal Hard Red Winter wheat-producing states, and the United States Department of Agriculture.

The finance committee recommended that the advantages of increased research and the need for its more adequate financing be brought to the attention of the state legislatures and the Congress of the United States; that all interested agencies join in a request to the federal government for a sum of \$150,000 to be added to the appropriations of the United States Department of Agriculture for the fiscal year, 1929-'30, for research work related to the above problems; and further that all interested agencies lend every possible assistance to the agricultural colleges and the agricultural experiment stations of the five states in such requests as they make for increased appropriations for research.

**K. S. A. C. Notes on the Conference**

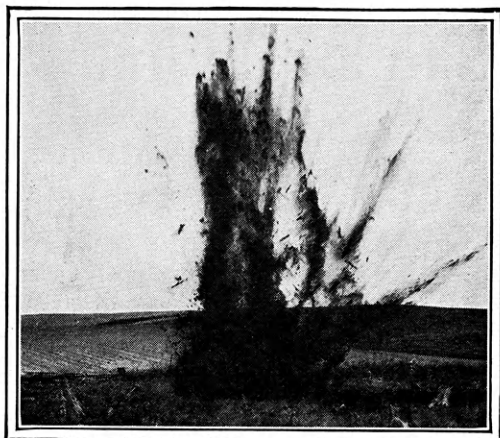
Among former members of the K. S. A. C. faculty who attended the wheat conference were: W. A. Cochel, formerly head of the Department of Animal Husbandry, now managing editor of the Weekly Kansas City

Star; C. C. Cunningham, '03, farmer of El Dorado, Kan., formerly in charge of cooperative experiments, and Bruce S. Wilson, '08, farmer of Keats, Kan., formerly assistant in cooperative experiments; L. A. Fitz, '02, formerly head of the Department of Milling Industry, now in charge of the Chicago office of the United States Grain Futures Administration; C. W. Mullen, '17, formerly a member of the Department of Agronomy, now associate editor of the Oklahoma Farmer-Stockman, Oklahoma City, Okla.

The conference group also included a number of former students and alumni of the college, among whom were the following: B. F. Barnes, '18, superintendent of the Colby branch of the Kansas Agricultural Experiment Station, Thomas county; C. M. Carlson, '27, county agricultural agent of Reno county, Hutchinson; E. H. Coles, '22, agronomist in charge of dry-land agriculture experiments, Garden City branch of the Kansas Agricultural Experiment Station; L. W. Fielding, '05, of the firm of Fielding & Stephenson Manhattan; Ralph L. Foster, '22, former alumni secretary, now assistant to the head of the Agricultural Department of the Missouri Pacific Lines, St. Louis, Mo.; E. H. Hodgson, '03, farmer, Little River, Kan.; R. W. Hoffman, f. s., manager of the Hoffman Mills, Enterprise, Kan.; Dr. Paul C. Mangelsdorf, '21, in charge of small grain and corn breeding, Texas Agricultural Experiment Station, College Station; Karl S. Quisenberry, '21, associate agronomist, Office of Cereal Crops and Diseases, United States Department of Agriculture, now stationed at University Farm, St. Paul, Minn.; A. F. Swanson, '19, associate agronomist in charge of cereal investigations at the Fort Hays branch of the Kansas Agricultural Experiment Station; W. H. von Trebra, '24, county agricultural agent, Lyons, Rice county, Kan.

As we go to press, President Farrell is completing the appointments to the permanent Wheat Research Committee and it is hoped that the present Congress will give favorable attention to the request for increased appropriations for wheat research in the southwest.





## Acres made to order

**T**HOUSANDS of acres of rich, productive land have been added to the farms of this country by the removal of scattered stumps and boulders, which prevented the cultivation of the entire field, reduced its yield, and the farmers' income.

The Federal Government, with the aid of the State Agricultural Colleges, made economical stump and boulder removal possible by supplying an efficient, low-cost land-clearing explosive, such as Pyrotol, and demonstrating to the farmers how to use it. Through the agricultural leaders in your college and other State Colleges, and the Extension Service, farmers were shown the advantages of using explosives to remove stumps and boulders from partially cleared acreage, or adding more acres by clearing cut-over land. The value of crops

grown on the sites of former stumps and boulders quickly pays the blasting costs. The cleared acre is the profit-maker.

By the du Pont Company making AGRITOL—a new and improved explosive for stump and boulder blasting and other farm uses—your college and other State Colleges are enabled to continue with the farm improvement work begun and carried so far with Pyrotol—the government explosive cartridge by the du Pont Company.

The methods of using explosives for farm improvements are described and illustrated in the "Farmers' Handbook of Explosives." It will be sent free, and also detailed information about AGRITOL, upon receipt of your request. Please use the coupon.



# AGRITOL

LAND-CLEARING EXPLOSIVE

*successor to Pyrotol*

E. I. du Pont de Nemours & Co., Inc.,  
Explosives Dept., Wilmington, Del. KA-12

Please send me a copy of the "Farmers' Handbook of Explosives" and information concerning AGRITOL for farm improvements.

Name.....

Town.....

State.....



# Kansas Pupils Learn the Business Side of Farming

Walter P. Powers, '30

Kansas contains more than 80,000 square miles of fertile land. The boys and girls of the common schools of today are the farmers of tomorrow, who will be farming this land to secure profits for themselves and to furnish the world with needed food products. The problem of these future farmers will be different from that of their fathers because they must make farming a business while many of their fathers and mothers could depend upon free land or upon increasing land values for their income. These young folks must be equipped to solve the business problems of farming. They must understand the business principles underlying successful farming.

Farm accounting work was first introduced into the grade schools of Kansas in the school year of 1926-'27. In that year it was taught in 17 Smith county schools and 13 schools in Morris county. These two counties found the new course practical as well as interesting. This year the course is being offered in 12 counties. Nearly all of the rural schools in Washington, Morris, Kingman, Harvey, Riley, and Geary counties are now offering a course in farm accounting.

The work consists of a course of about 16 lessons which are correlated with the work in the eighth grade arithmetic. It was approved and adopted as an optional part of the regular course of study by the state board of education. The subject matter of the course was compiled by members of the faculty of the Kansas State Agricultural College and is the record of the business transactions for one year on a 400-acre farm in Kansas.

The pupils transfer the items from this record to the regular account book recommended for the farmer's use. Completing the calculations for each transaction and working out problems in the exercises which follow the record of each month's business will furnish a training in the solution of the practical problems of farm life. Besides this training, there will develop in the mind of the pupil a better appreciation of the busi-

ness relationship existing among the different enterprises on the farm.

The course is a very simple one. The transactions are arranged by months. The language used is that of the farm home. The problems given in the exercises are very practical, just such ones, in fact, as every boy and girl, man and woman, are called upon to solve as a part of the business of buying and selling the products of the farm.

A manual for the use of the teacher accompanies the text. This book gives the solution of all problems as well as the rule by which the problem is worked. It also contains the farm account record properly entered in the classified accounts, thus placing in the hands of the teacher a complete and accurate explanation of the work.

The account book is one of the simplest forms of classified entries.

The last work to be done in the course is the summary and analysis of the farm business for the year. This is emphasized as one of the most necessary steps in the completion of the record. Through the analysis the pupil is able to gain the correct information concerning the returns from the various enterprises. He is also able to develop a practical program of production which, when applied to the business will result in an increase in the farm income.

Personal expenses and the quantity or value of products used in the household are not included in the record. In addition to the list of receipts and expenses, the inventory values of farm buildings, machinery, supplies, and live stock at the beginning and end of the year are given.

This training in farm accounting, in the summarizing of the year's business, and in drawing conclusions from it is offered to the boys and girls of the eighth grade to better fit them to meet the business problems of farming. The system presented is simple, and if properly kept and understood by the boys and girls, will give them the training needed to keep a satisfactory set of accounts when they assume charge of a real business.

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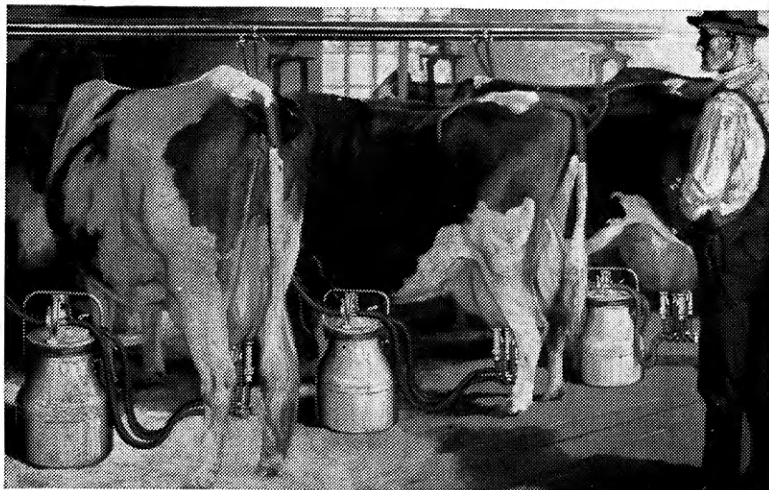
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