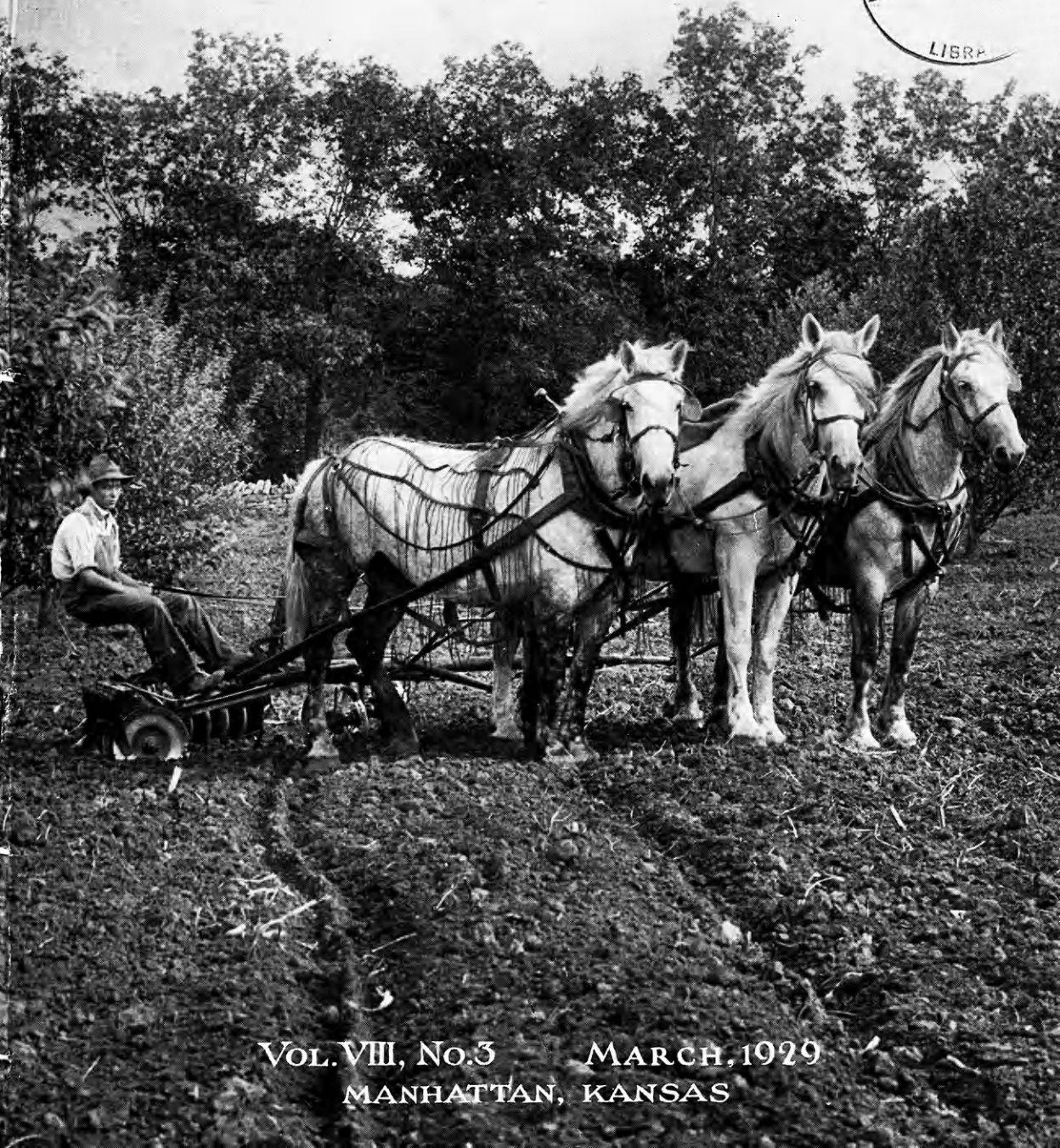


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The KANSAS AGRICULTURAL STUDENT



VOL. VIII, No. 3 MARCH, 1929
MANHATTAN, KANSAS

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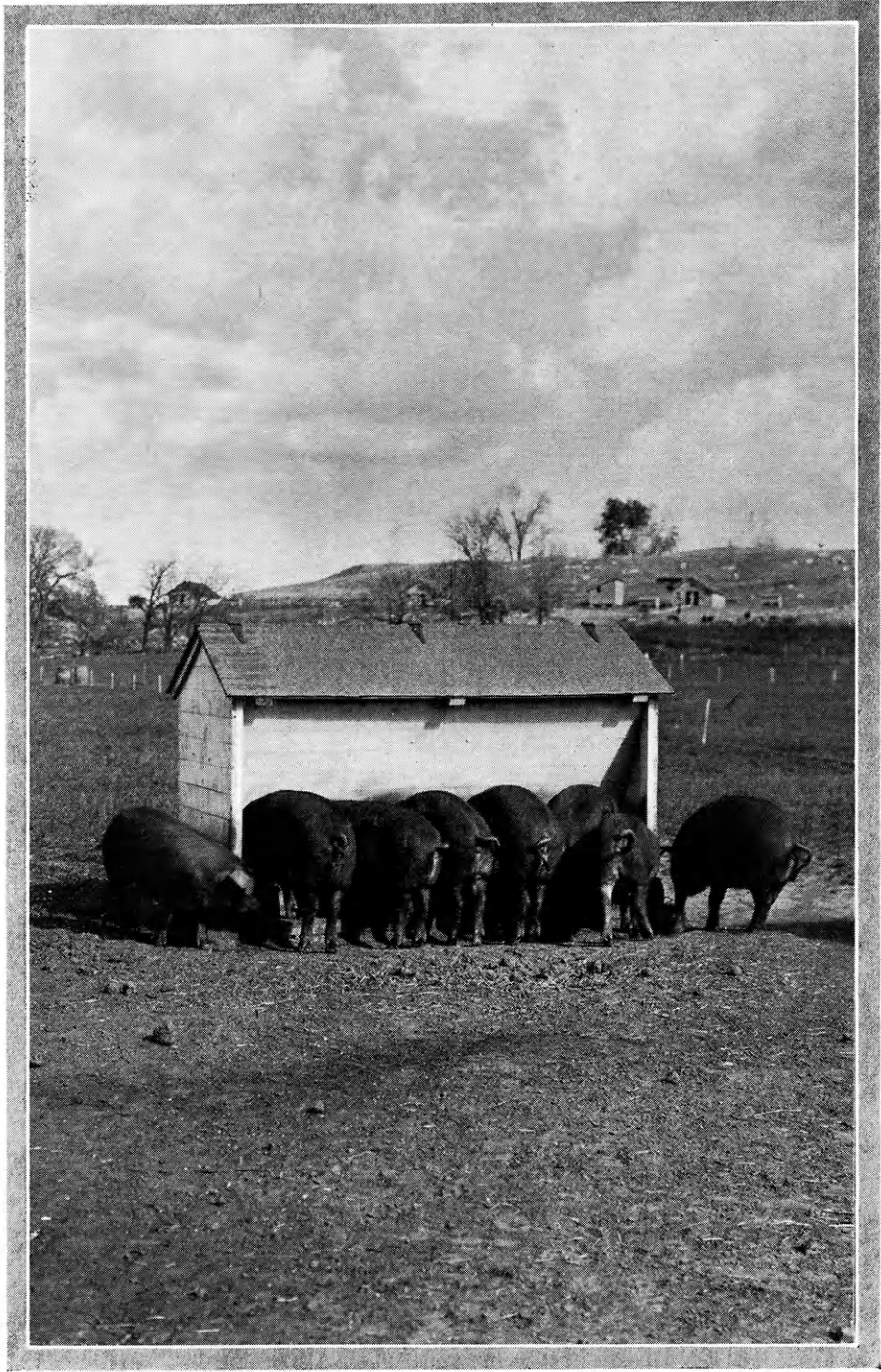
HOME OF W. A. BARGER OF GARFIELD, PAWNEE COUNTY
STATE WHEAT CHAMPION, 1928

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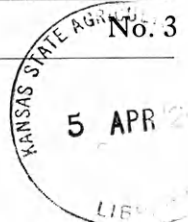


BY HELPING THEMSELVES THEY INCREASE RETURNS
TO THE OWNER

The Kansas Agricultural Student

VOL. VIII

Manhattan, Kansas, March, 1929



Atlas Sorgo

V. C. Hubbard, M. S., '29

A new variety of forage sorghum has recently been announced by the Kansas Agricultural Experiment Station. This new variety is known as Atlas sorgo, and is the result of a cross between Blackhull kafir and "Sourless cane." The cross was made by Mr. I. N. Farr, a farmer of Stockton, Rooks county, Kan. About eight years ago the unfixed hybrid seed from this cross was sent to the Agricultural Experiment Station. A large number of selections were made. These were grown in head rows. In 1923 a pedigreed strain that appeared especially promising was selected by Prof. John H. Parker. This is a leafy, vigorous strain with rather tall stalks. The sweetness of the juice in the stalks adds to the value of Atlas sorgo as a forage crop. The stalks of this new variety are strong and much more resistant to lodging than those of Kansas Orange sorgo, as shown in the accompanying illustration. Atlas sorgo is white seeded and produces a fairly good grain yield, though probably not so much as the kafir parent.

Atlas sorgo has heads which closely resemble its kafir parent. On the terminal markets, under the federal grain grades for sorghums, the grain of Atlas sorgo is graded as white kafir. Thus the farmer who grows Atlas sorgo will obtain a fairly high yield of grain which will bring a good market price, and which he can feed to live stock on his own farm, obtaining about the same results as with standard varieties of grain sorghum, such as kafir, milo, and feterita.

Atlas, on the average, produces about 80 to 90 per cent as much tonnage as Kansas Orange sorgo. Most farmers are willing to accept this slightly lower yield in return for the lowered cost of harvesting a variety that stands up well as compared with a variety such as Kansas Orange, which in many years

has to be cut by hand or with a mower because of its tendency to lodge.

Atlas sorgo has been tested on the Agronomy Farm of the Agricultural Experiment Station for several years in head rows, small plats, and on a field scale. Seed for testing purposes has also been sent from the main station at Manhattan to the branch stations and to farmers located in various parts of eastern and east central Kansas. In southeastern Kansas Mr. I. K. Landon and his co-operators have grown this new variety on the experimental fields and on farms in the neighborhood. Mr. R. E. Getty, forage crops specialist, and L. C. Aicher, superintendent of the Fort Hays branch station, have also grown this new variety in plats and in small fields. Atlas has also been tested at Chillicothe, Tex., by H. N. Vinall, senior agronomist in charge of forage sorghum investigations for the United States Department of Agriculture.

Prof. H. H. Laude, in charge of cooperative experiments conducted by the Kansas Agricultural Experiment Station, included Atlas in the sorghum variety tests on Kansas farms in 1926, 1927, and 1928. These tests were carried on in 54 cooperative variety trials in 41 counties. The results obtained and the field observations made indicate that Atlas sorgo is well adapted to most of eastern Kansas, but does not do so well in western and northwestern Kansas where it is too late to be well adapted. On the basis of the information now at hand, the station agronomists cannot recommend Atlas sorgo west of Salina or north of the Kansas river.

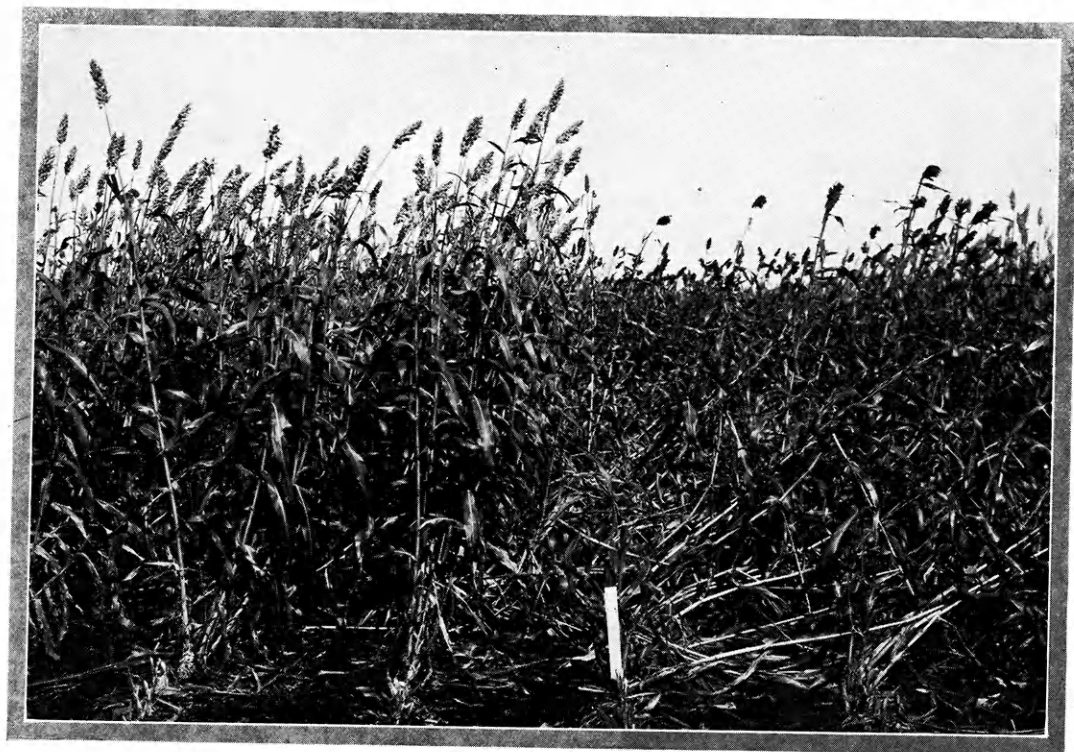
One grower of this new variety in southeastern Kansas reports that a field of another variety was badly lodged by a strong wind storm, while a nearby field of Atlas, averaging about eight feet in height, showed no

signs of lodging. Another farmer states that his field of Atlas sorgho stood up well for harvesting, while a field of Sunrise kafir lodged badly. Mr. Irwin Kreutziger of Marion, Kan., obtained 347 bushels of grain from a 10-acre field of Atlas and states that his field averaged approximately 16 tons of forage to the acre.

Tests have shown that hogs, if given a

back at the end of the feeding trial.

In 1928 seed of Atlas sorgho was distributed by the Kansas Agricultural Experiment Station to 20 members of the Kansas Crop Improvement Association for trial and for the production of pure seed for distribution to other farmers of eastern Kansas. These fields were visited by some member of the Agricultural Experiment Station staff or by one



ATLAS VERSUS KANSAS ORANGE

This picture shows a comparison of the amount of lodging in adjacent fields of sorghum. The Atlas is shown on the left; the Kansas Orange on the right. The picture was taken on the Agronomy Farm, Manhattan, 1927.

choice, will select those feeds which they like best. Superintendent Aicher reports that at the Fort Hays station two self-feeders were placed in a feed lot. One of these self-feeders was filled with Dawn kafir and the other with grain of Atlas sorgho. Sixty shoats used in this experiment showed a decided preference for the grain of Atlas sorgho. During the latter part of the test the grain of Dawn kafir was hardly touched. Over 300 pounds more of Dawn kafir than of Atlas were weighed

of the extension agronomists, in order to observe the purity of the fields, especially as regards their freedom from natural crosses, and to learn something of the adaptation and probable value of the new variety.

The head characters of Atlas sorgho are reasonably well fixed, although care must be used in roguing out the occasional off-type heads which occur in fields that are to be used for seed. When the crop is to be used

(Continued on page 90)

A Confinement Method of Raising Turkeys

H. M. Scott

Assistant Professor of Poultry Husbandry

From day-old poults to half-grown turkeys averaging 7.85 pounds at 16 weeks of age without ever having set foot on the ground—this is in answer to the erroneous popular opinion that turkeys are by nature very wild and that they are unable to adapt themselves to confinement or close quarters. The Kansas Agricultural Experiment Station has been growing turkeys for several years on limited areas.

The growing of turkeys in confinement has received considerable attention within the last few years from several agricultural experiment stations. The fact that since the year 1890 there has been a marked decline in turkey production in the United States has induced these stations to take up this work. Certainly this decline is not due to a lessened demand for turkey meat. Turkeys continue to be in demand during the holiday seasons and there is a marked tendency for the turkey to be included in the diet the year around. Then, too, farmers have repeatedly year after year obtained good prices for No. 1 turkeys. Certainly, from the standpoint of the consumer, the turkey is not growing in disfavor.

A tremendous mortality experienced during the early growing period, due to disease, predatory animals, cold rains, hail storms, etc., has done much to discourage the production of turkeys. In an effort to control these limiting factors, the confinement method of raising turkeys has become popularized.

Since it is known that turkeys can be reared in confinement and that most turkey diseases are due to contaminated ground, it may be said safely that confinement will do much to eliminate the factors causing this high mortality.

The questions arise, "Is the confinement method practical? Will it justify the increased feed costs and the increased overhead due to the necessity of having proper equipment?" Whether it is practical or not, will depend upon the individual case. It would not be

practical for the farmer who year after year raises a fair per cent, say 70 per cent, of all the poults hatched. To the farmer sustaining a mortality of 50 per cent, due to a contaminated range, and then suffering an additional 25 per cent loss due to hail storms and predatory animals, it would be practical. It is not the purpose of the writer to convey



HEALTHY YOUNG TURKEYS ON RANGE

Upper: A group of poults about 24 weeks of age on limited range. Note the mash hopper.

Lower: A tom 16 weeks of age, just ready for the range. Note his picture was taken near the corner of the roosting platform which is in the center of the range.

the idea that turkeys to be raised successfully must be raised in confinement. Most of the turkeys raised in the United States each year are range grown and will continue to be for some time, how long no one can say.

There are several systems of growing turkeys in confinement. While these may vary as to minor details, the fundamental principle underlying each is the same. It is the

principle of "sanitation" involving clean ground or quarters, clean feed, and clean water. In addition, the confinement method affords the opportunity of having the poults under close surveillance at all times. Losses due to sudden cold rains and hail storms and from coyotes are eliminated. The numerous systems depend upon artificial hatching and brooding methods to carry out the principle of "sanitation." Here at the Kansas station all poults are hatched in incubators. The machine is run at 100°, 101°, 102°, and 103°, respectively, for the first, second, third, and fourth weeks of incubation. Turkey eggs seem to require more moisture than chicken eggs.

The management of the poults during the brooding period is almost identical with the methods employed in the artificial brooding of baby chicks. When the poults are from 48 to 60 hours old they are removed to the brooder house, the brooder house having been thoroughly cleaned and disinfected beforehand. The temperature is maintained at 95 degrees at the edge of the canopy on a level with the backs of the poults. This temperature is reduced each week in the same manner that it is reduced in the brooding of chicks until they become brooder weaned at the expiration of 6 to 8 weeks, depending upon the season. The floor of the brooder house is covered with straw.

Each poult is forced to drink of luke-warm water and then placed beneath the brooder canopy. From the start, the poults have access to a dry mash placed in open hoppers. This mash is made of the following ingredients:

Yellow cornmeal	20 pounds
Ground wheat	20 pounds
Wheat bran	15 pounds
Ground oatmeal	15 pounds
Meat scraps	15 pounds
Dried milk	5 pounds
Alfalfa leaf meal	5 pounds
Mineral mixture*	5 pounds
<hr/>	
Total	100 pounds

* This mineral mixture is composed of 1 part salt, 2 parts bonemeal, and 2 parts calcium carbonate.

A quart of cod-liver oil should be added to each 100 pounds of the mash as long as the poults are in confinement.

In addition to this mash the poults receive cottage cheese five times daily—just what they will clean up in 10 minutes. This is fed on clean, flat boards. As a succulent and source of vitamin A, lawn clippings supplied several times daily have proved very satisfactory. The feeding of green feed containing unusually coarse stems should be avoided, thus eliminating any danger of a crop-bound condition. The poult receives this daily ration until 6 weeks of age. At the expiration of this time, the feeding of cottage cheese is discontinued. This would obviously lower the plane of protein intake. To make up this deficiency, 5 pounds of meat scrap and 5 pounds of dried milk are added to the mash, while the bran is lowered and the alfalfa leaf meal eliminated. The ingredients and their proportions in this growing or developing mash are as follows:

Yellow cornmeal	20 pounds
Ground wheat	20 pounds
Ground oatmeal	20 pounds
Wheat bran	10 pounds
Meat scraps	15 pounds
Dried milk	10 pounds
Mineral mixture	5 pounds

Total100 pounds

The poults are continued on this ration until 12 weeks of age after which in addition to the mash, a grain mixture composed of 3 parts cracked yellow corn and 1 part wheat is fed in open hoppers. This ration is fed until time to prepare the turkeys for market.

It has been observed that the poults do not take readily to the grain after having been started on the all-mash feed and as a result the grain consumption will be low at the start. This should not cause any great anxiety on the part of the grower as the consumption will gradually increase until by market time they will be eating almost entirely of the grain and only slightly eating of the mash.

Turkeys grow very rapidly and when confined to the brooder house it is necessary that they receive a greater amount of floor space

(Continued on page 88)

Farm Tenancy in Kansas¹

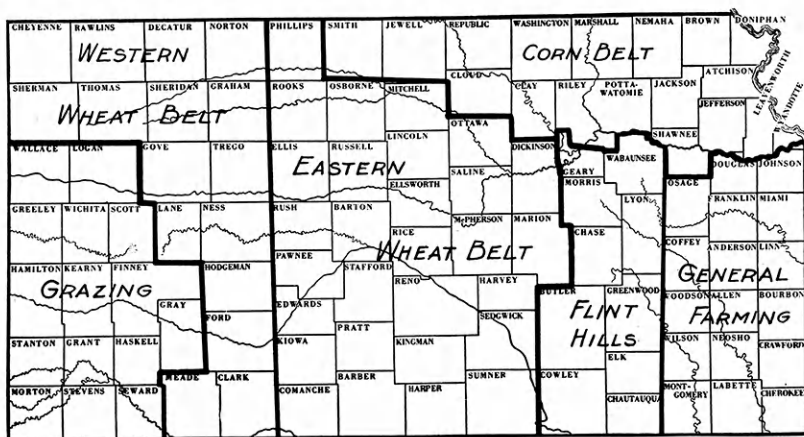
Roy E. Bonar, '29

Kansas, in 1925, had a population of 1,820,986. Of this number, 45 per cent, or 830,142, constituted the farm population.

Because tenancy conditions vary widely, the state will be divided into six distinct sections as shown in the accompanying illustration, and each section discussed separately. The Grazing section, 15 counties in southwestern Kansas, has a total population of 49,939. Sixty-four per cent of the people in this section are classified as farm population. This territory is thinly settled, there

are approximately nine farm people per one thousand acres of farm land, or a few more than in the Grazing section. Tenants make up 43 per cent of all farmers in this section. In 1910 tenancy was much higher in this section than in the Grazing section. This also was at that time a comparatively new territory, and tenancy from 1910 to 1925 has increased gradually.

The Eastern Wheat Belt section which includes 29 counties in central Kansas has a total population of 529,435. Farmers make



THE SIX SECTIONS OF KANSAS USED IN THE STUDY OF TENANCY

This map shows Kansas divided into six sections, each section showing an area throughout which tenancy changes during the last 20 years have been quite uniform.

being approximately seven farm people per one thousand acres of farm land. Forty per cent of the total farm population are tenants. In 1910 tenancy was very low in this region, averaging about 10 per cent of the total number of farmers. This, no doubt, was due mainly to its being a new territory with only a small part of the land in farms.

The Western Wheat Belt section, which includes 17 counties north and east of the Grazing section, has a total population of 114,103. Sixty-three per cent of this number make up the farm inhabitants. There

up 44 per cent of this number. This region has 17 farm people per one thousand acres of farm land and 46 per cent, or 22,739, are tenants. From 1910 until 1925 tenancy increased from 32 to 46 per cent, but the increase was not so marked as in the two sections farther west.

The Flint Hills section consists of 10 counties in east central Kansas and has a total population of 187,714, 48 per cent being farm population. This section has approximately 21 farm inhabitants per one thousand acres of farm land. Tenancy increased in this section from 40 to 42 per cent in the period, 1910 to 1925.

(Continued on page 90)

1. The information presented in this article is based on the United States agricultural census for 1925 and the Twenty-fifth Biennial Report of the State Board of Agriculture.

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MANHATTAN-KANSAS

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OTTO E. FUNK—A TRIBUTE

With the passing away of Otto E. Funk, son of Mr. and Mrs. F. N. Funk, Marion, Kan., we, the Division of Agriculture, lost a loyal worker and strong leader. During his short stay with us he established a record unsurpassed in certain commendable ways by any present or former student in the division.

As a sophomore, Otto began his outstanding record by his showing on the junior stock-judging team in the contest at Denver. Here he placed first in the entire contest. In his junior year, continuing his work in stock judging, he was second high individual at Chicago in competition with 114 men representing 23 institutions. His judging work was not confined to stock judging alone, but he was a member of the meats-judging team as well. In meats judging he placed fourth in the contest at Chicago and sixth in the contest at Kansas City. Mr. Funk was the only sophomore who ever made such a record on the junior stock-judging team and the only junior who ever made such a good mark on the senior teams. He had started his preparation for crops judging and hoped to make the crops-judging team the first semester of his senior year.

In addition to his judging work he was manager of the Ag Fair minstrel show last spring, a member of the College Glee Club his freshman year, and active in the Y. M. C. A. throughout his college career. With all of these activities his grade standing was above the average, carrying full assignments all the time.

Here a man, now gone, has set a goal to which others might well strive and which few will reach. He made a worthy record and his absence is felt in the division.

NEW MEMBERS IN ALPHA ZETA

Alpha Zeta is a student honorary agricultural fraternity. Counting the nine members initiated the first semester the fraternity had 22 members enrolled for the second semester. Their membership will stand the test measured by the ideals of the fraternity—scholarship, character, personality, and leadership.

The chapter may elect to membership outstanding agricultural students who are but fourth-semester men. However, a student must be exceptionally well qualified to be elected while yet a sophomore. A large majority of Alpha Zeta members are elected when they are juniors or seniors.

(Continued on page 80)

Why the Millers Do Not Want Damaged Wheat*

R. W. Freeman, F. M. E., '30

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It is not very encouraging for the farmers to grow good crops of wheat and then encounter such unfavorable harvesting conditions as were experienced both in the summer of 1927 and again in 1928. It is particularly discouraging when two such seasons follow each other, and especially when the wheat crops were so promising. It may seem to the farmers like adding insult to injury to be told that their wheat will be discounted in price because of this damage. The farmers were not responsible for the bad weather, and they did their utmost to take care of the wheat in the best manner possible.

The primary cause of wheat damage is too much moisture at the time of harvesting. Too much moisture may be present in wheat either because it is cut while it is too immature, or because it is cut when wet with dew or rain or wetted by rain after cutting. It is sometimes thought that moisture due to immaturity is the more serious. This is simply because the per cent of moisture is usually higher in such wheat than it is in wheat that is wetted by dew or rain. During good weather conditions wheat can be cut with a harvester and cured in the shock when the kernels contain as much as 30 per cent moisture. Wheat that contains 20 per cent moisture may appear quite ripe, but such wheat would have too much moisture to be harvested with a combine and then stored.

When the wet weather exists over a considerable period, wheat may be spoiled in the shock although it was cut in the prime condition. It may also be spoiled in the stack by excessive wet weather, especially if the stack was not well built. Combine wheat has received a great deal of blame for damage both this year and last. If combine wheat is cut when it is dead ripe, it may be even better than wheat which is cut with a harvester and then shocked, especially if the shocks are exposed to much wet weather.

Too much moisture in wheat causes heating. Wheat is a living organism. It is breathing. This means that the process of respiration takes place and this process produces heat. It so happens that excess moisture stimulates respiration, and heating also stimulates this activity. Therefore, when wheat starts heating the process goes on at an accelerated rate, and unless the wheat is exposed so as to dissipate the heat, it will be very quickly damaged beyond repair.

There are many kinds of damage and manifestations of damage. Sometimes damage is due to sprouting. Sometimes it is due to mold growth. The growth of microorganisms produces what is known as musty wheat. Sometimes wheat has what is known as a ground odor, and sometimes straw odor. All these are indications that there is damage in wheat.

Now the question is why do the millers object to such wheat. In the first place it produces a smaller quantity of flour. As a rule one bushel of sound wheat produces about 42 pounds of total flour, 33 to 36 pounds of this is rated as first-class, from 4 to 8 pounds as second-class, and the rest as low-grade. Low-grade wheat is not used for bread making in the United States. When wheat has been damaged, the yield of both total flour and first-class flour is much reduced.

In the second place, it is much more difficult to make a perfectly white flour from damaged wheat. The baking trade demands a white flour, and the millers know that unless they furnish a flour free from specks, they will not be able to sell it at a profitable price. Why is it more difficult to make a flour free from specks from damaged wheat? The wheat kernel consists of three main parts—the outside bran coat, the germ, and the inside endosperm. The miller's problem is to separate the first two from the endosperm and convert the endosperm into white flour. He must thus grind the inside without pul-

* The information in this article was supplied by Dr. C. O. Swanson, head of the Department of Milling Industry.

(Continued on page 90)

COLLEGE NOTES

ANNUAL STUDENT FITTING AND SHOWING CONTESTS

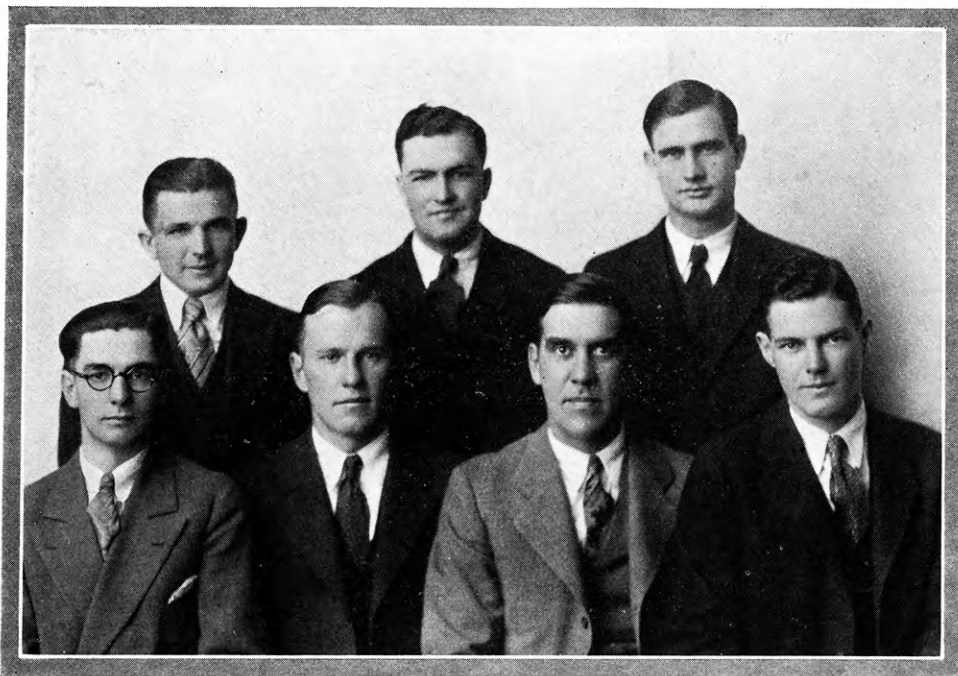
CONTEST IN FITTING AND SHOWING DAIRY CATTLE

The third annual Dairy Fitting and Showing Contest was held in connection with the Animal Husbandry Fitting and Showing Con-

test, February 6 and 7, 1929. The dairy contest was sponsored by the Dairy Club, a student organization, local creameries, and other organizations interested in dairy progress.

test, February 6 and 7, 1929. The dairy contest was sponsored by the Dairy Club, a student organization, local creameries, and other organizations interested in dairy progress.

50 per cent on the contestant's ability to show his animal. Nine classes of dairy cattle were shown: One class of cows and one of heifers in each of the four important dairy breeds, and one class of mixed bulls. The placings were as follows: In the Holstein cow class, first, Ray-



LIVE STOCK JUDGING TEAM

Standing: S. S. Bergsma, Edward Crawford, I. K. Tompkins. Seated: W. H. Lee, O. E. Funk, Prof. F. W. Bell (coach), F. W. ImMasche.

test, February 6 and 7, 1929. The dairy contest was sponsored by the Dairy Club, a student organization, local creameries, and other organizations interested in dairy progress.

The contestants, 46 in number, were given 14 days in which to fit their animals for the show. Judging was based 50 per cent on improvement made in general appearance and

mond Hoglund; second, Raymond Kent; third, Clyde Reed. In the Holstein heifer class, first, Ben Kohrs; second, Orren Karr; third, R. R. Conger. In the Ayrshire cow class, first, C. M. Dunn; second, Homer Rundle; third, L. A. Jacobson. In the Ayrshire heifer class, first, C. Vernon Glassburn; sec-

(Continued on page 77)

**EXCERPTS FROM A STUDENT HERDS-
MAN'S LETTER ON HIS TRIP TO
THE NATIONAL WESTERN
LIVE STOCK SHOW**

Of all the shows I made this fall the Denver show, or National Western, was the most enjoyable. It was not only the show that was so agreeable but the fact that I wasn't "flunky" gave me more liberty and a different feeling. The climate was such a change it gave a fellow a new grip on life. Unlike Chicago and Kansas City the air was clear, there was no wind, and the cold was constant, though it was warmer in the morning than in the evening.

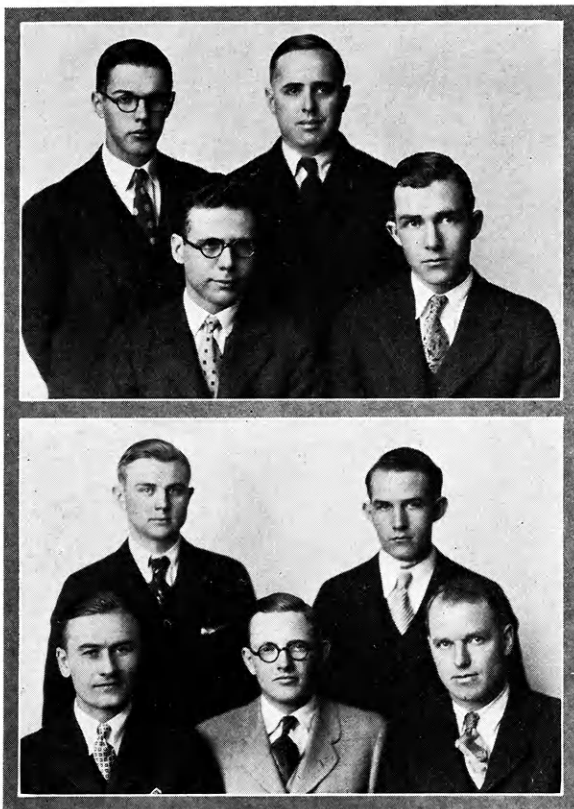
While at Denver I made a trip to the Diamond K ranch where things are done on a large scale. The ranch includes 33,000 acres of which 3,000 acres are in small grain. The buildings are all labeled, thus presenting a pleasing and unique appearance much to the convenience of the visitor. There is a filling station, a herd barn, an elevator, a horse barn, a bull barn, a dining hall, bunk houses, shops, dog kennels, and the mansion. There are 1,500 head of dairy cattle and about 300 head of Angus, mostly yearlings and two-year-olds, as they are just starting in the Angus cattle game. One of the subdivisions

of the ranch handles Shorthorns. From 60 to 150 men are employed to do the work about the place.

The car-lot show was much different than that at Kansas City and Chicago as there were only a few cars of fat stock. Most of the pens were filled with feeder stock. Herefords predominated although the championship went to a lot of Shorthorns. Angus were scarce. There were many car lots of

bulls and heifers ranging from calves to two-year-olds. I never saw so many good bulls so nearly alike at one time before. One load sold for \$400 a head. It seems almost impossible that anybody would pay \$6,000 for bulls to sire calves for market but that is what the Matador Land and Cattle Company did.

I wound up the trip by going on a trip through the beef coolers of the packers who bought the college steers. Seeing the animals on the hooks sure drives home some of the comments one hears made of the animals on foot. One real fat show heifer was killed and was in Swift's cooler. After 150 pounds of fat had



DAIRY JUDGING TEAMS

Top group: Dairy products judging team. Standing: T. R. Freeman, Prof. W. H. Martin (coach). Seated: R. M. Mannen, T. W. Kirton.

Bottom group: Dairy cattle judging team. Standing: Ray L. Remsberg (alternate), F. H. Schultis. Seated: M. G. Mundhenke, J. F. True, Prof. H. W. Cave (coach).

been removed it was not noticeable that any had been cut away. The packers say she was almost worthless as no retailer would want her and fat is of small value. This trip alone was worth the whole trip to Den-

ver, so I feel very well repaid for the time lost while I was away from K. S. A. C.

—C. S. C., '29.

POULTRY JUDGING TEAM PLACES

SECOND

The K. S. A. C. poultry judging team placed second in a field of ten contestants at the Coliseum Poultry Show, Chicago, December 22, 1928. The team was composed of R. W. O'Hara, Blue Mound, S. R. Stewart, Vermilion, F. J. Raleigh, Clyde, and M. K. Fergus (alternate), Garnett. The contest consisted of: (1) The judging of five classes of production birds; (2) the judging of five rings of exhibition birds placed by an American Poultry association judge; and (3) the writing of an examination composed of 100 questions over the American Standard of Perfection.

In addition to making second place as a team a large number of individual prizes were won. S. R. Stewart was high individual in the entire contest. He placed second in exhibition judging, sixth in production judging, and second in the written examination. In prizes he won \$30 in cash and two silver medals. R. W. O'Hara was first in the written examination and third high man in the contest. He won \$5

in cash and a gold and a bronze medal. F. J. Raleigh placed third in the written contest and was awarded a bronze medal. It will be noted that the members of the Aggie team did their outstanding work in the written examination, placing first, second, and third. The ranking of the contesting teams was as follows: (1) Iowa, (2) Kansas Aggies, (3) Oklahoma, (4) Purdue, (5) Illinois, (6) Missouri, (7) Texas A. and M., (8) Nebraska, (9) North Dakota, (10) Ohio.



K. S. A. C. MEATS JUDGING TEAMS

Top group: Women's meats judging team—placed second in women's contest at American Royal. Standing: Genevieve Long, Grace Dougherty. Seated: Flora Deal, Prof. David L. Mackintosh (coach). Arlee Murphey.

Bottom group: Men's meats judging team. Standing: I. K. Tompkins, S. R. Bellamy. Seated: Dale A. Scheel, Prof. David L. Mackintosh (coach), O. E. Funk.

THE AG FAIR

The ninth annual Ag Fair will be held Saturday, May 11, 1929. The slogan of a "Bigger and Better Ag Fair" in the past has been carried out and each fair has been better in some way than the one just before it. This year it is the intent of the Ag Fair Board to continue the progress by enlarging our educational exhibit department and having a larger stock show. In addition to this, there will be several other changes that will also aid in our progress.

In addition to being a source of good advertisement for the Division of Agriculture, the Ag Fair is a method whereby the Ags get into the collar and put over an enterprise which is much bigger than any other thing undertaken by the division during the school year. This work that is done for the Ag Fair teaches each Ag the

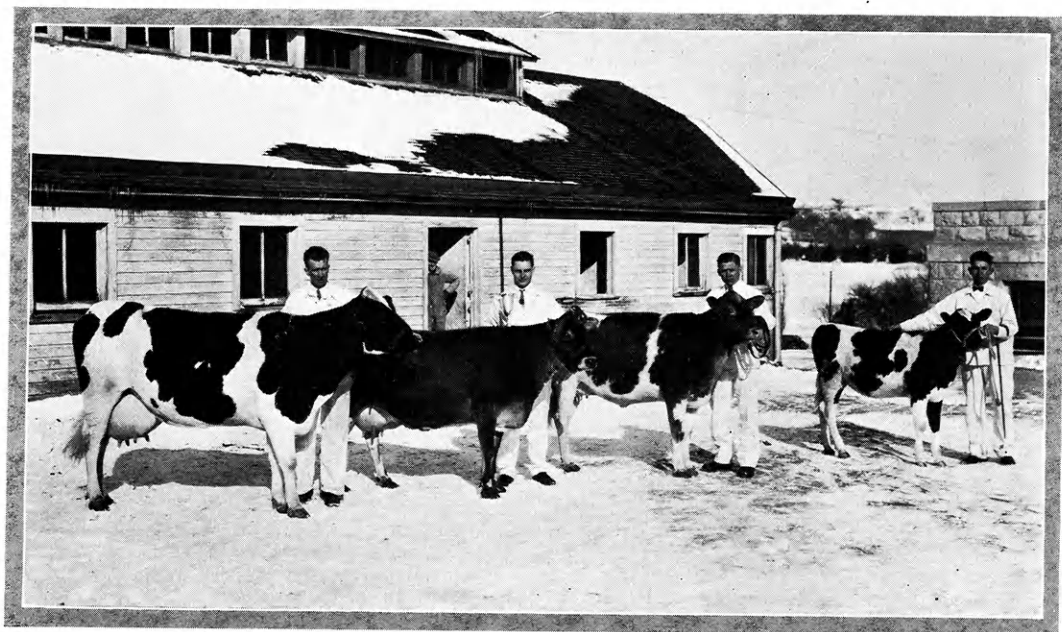
sion of Agriculture, the Ag Fair is a method whereby the Ags get into the collar and put over an enterprise which is much bigger than any other thing undertaken by the division during the school year. This work that is done for the Ag Fair teaches each Ag the

meaning of the word cooperation so that not only while in school but after graduation he will know how to work with others.

The Ag Fair in order to succeed must be put over in a snappy manner. This can be accomplished in two ways: First, the students of the division must get into the job and make it roll along; second, everyone directly concerned—students, former students, and alumni of the division—must support the Ag Fair by giving information regarding it

class, first, Walter Geurkink; second, Lee Albin; third Orville W. Robson. In the Jersey cow class, first, John L. Wilson; second, Ray L. Remsberg; third, Albert L. Reichle. In the Jersey heifer class, first, S. Roger Stewart; second, F. G. Ackerman; third, L. M. Sloan. In the mixed bull class, first, W. A. Van Lew; second, Mahlon M. Bleachy; third, A. E. Chase.

The winners of Wednesday's contests competed for breed championships and grand and



BREED CHAMPIONS IN THE DAIRY FITTING AND SHOWING CONTEST

From left to right: Raymond C. Hoglund of M:Pherson and the Holstein he showed; John L. Wilson of Geneva and the Jersey shown; Walter Geurkink of Manhattan and his champion Guernsey heifer; C. Vernon Glassburn of Freeport and the Ayrshire heifer he showed.

to their friends and boosting for it from first to last on all occasions.

Each Ag Fair of the past has been a success. We know that we can make this one a success, so let us get our pep up and make the 1929 Ag Fair the biggest and best ever.

FITTING AND SHOWING CONTESTS

(Continued from page 74)

ond, Everett Lowry. In the Guernsey cow class, first, H. B. Harper; second A. B. King; third, Vernon Ritz. In the Guernsey heifer

reserve championships on Thursday night. The results were: Raymond Hoglund, champion Holstein; C. Vernon Glassburn, champion Ayrshire; Walter Geurkink, champion Guernsey; and John L. Wilson, champion Jersey. (See accompanying illustration.) The Grand Champion showman's cup was awarded to John L. Wilson, Iola, and the Reserve Championship was won by C. Vernon Glassburn of Freeport.

J. C. Nesbit, one of the K. S. A. C. extension specialists in dairy husbandry, was judge of the contest. Richard W. Stumbo of

Iola, winner of the Grand Champion showman's cup last year, managed the contest.

CONTEST IN FITTING AND SHOWING BEEF CATTLE, HOGS, HORSES, AND SHEEP

The part of the show sponsored by the Block and Bridle Club, an animal husbandry organization, was held Thursday, February 7. Animals were judged on a basis of the ability of the showman to fit and show his animal and not on the merits of the animal shown.

In each of the four sections of this animal husbandry contest a K. S. A. C. alumnus had offered a gold medal for the winner. The donors were:

Claude E. Lovett, '16.....	Cattle
J. B. Angle, '19.....	Hogs
A. M. Paterson, '22.....	Sheep
J. J. Moxley, '13.....	Horses

The chief judge of the contest was Prof. H. J. Gramlich, professor of animal husbandry in the Nebraska College of Agriculture. He was assisted by the college herdsman for each class of animals judged, as follows: Cattle, A. E. Allen, herdsman; Hogs, W. W. Baylés, herdsman; Sheep, Thomas Dean, herdsman; and Horses, Thomas Greer, herdsman.

From 14 to 16 contestants entered in each class. The winner and five runners-up for each class of animals in the contest were as follows:

Cattle

Rank

1st	M. L. Cox, Goodrich
2d	Edward Crawford, Stafford
3d	S. R. Bellamy, Meade
4th	Paul G. Sayre, Manhattan
5th	W. J. Lynn, Centralia
6th	Clinton K. Tomson, Wakarusa

Hogs

Rank

1st	Paul R. Chilen, Miltonvale
2d	D. A. Carlson, Manhattan
3d	W. R. Gregory, Walnut
4th	Fred Hedstrom, Manhattan
5th	R. L. Rawlins, Holton
6th	S. S. Bergsma, Lucas

Sheep

Rank

1st	J. J. Yeager, Bazaar
2d	T. H. Gile, Scandia
3d	W. H. Polhamus, Parker
4th	F. S. Coyle, Manhattan
5th	H. W. Ellis, Coldwater
6th	C. Porter McKinnie, Glen Elder

Horses

Rank

1st	R. B. Meredith, Manhattan
2d	W. H. Polhamus, Parker
3d	J. A. Terrell, Syracuse
4th	O. W. Greene, Paradise
5th	H. R. Hiett, Haven
6th	R. W. O'Hara, Blue Mound

Although it fell the lot of this contest to come on one of the stormiest and coldest nights of the year, a large and interested crowd were present. Further, they were not disappointed for the contest was snappy and interesting from beginning to end. It demonstrated what about 75 long-course students and 25 Farmers' Short Course students, all interested in the live stock industry, could do along the line of fitting and showing good types of farm animals.

LEGEND

APPLE, POULTRY, AND CROPS JUDGING TEAMS

Top group: Apple judging team. From left to right: O. L. Buzard, T. F. Winburn, L. W. Koehler, S. G. Kelly, Prof. W. F. Pickett (coach).

Middle group: Poultry judging team. From left to right: S. Roger Stewart, F. J. Raleigh, R. W. O'Hara, M. K. Fergus, Prof. H. M. Scott (coach).

Bottom group: Crops judging team. From left to right: H. P. Blasdel, L. P. Reitz, G. J. Caspar, H. C. Abell, Prof. J. W. Zahnley (coach).

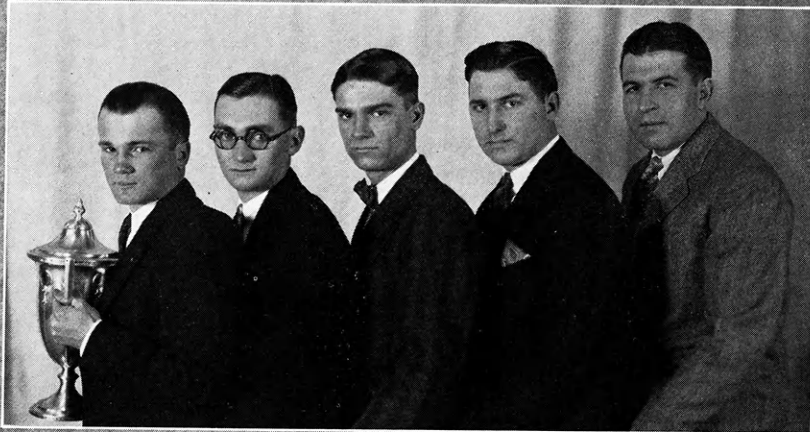
AGGIE JUNIOR STOCK JUDGES WIN

The K. S. A. C. junior live stock judging team, coached by Prof. F. W. Bell, won first place at the Western National Live Stock Show at Denver, Col., Saturday, January 12, 1929. This excellent showing lends encouragement to the prospects for a winning team of senior judges again next year.

The personnel of the junior judges was: Paul R. Chilen, Miltonvale; F. H. Schultis, Sylvan Grove; R. W. O'Hara, Blue Mound;



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APPLE, POULTRY, AND CROPS JUDGING TEAMS
(See opposite page for complete legend.)

Harry A. Paulsen, Stafford; J. A. Terrell, Syracuse; and R. M. Hoss, Potwin (alternate). R. W. O'Hara was high man in the contest on breeding stock, while a Colorado student held a two-point lead over Paul Chilen in judging the classes of fat stock. Kansas was first in the contest on horses, sheep, and hogs with Utah leading on cattle.

The contest consisted of placing ten classes of live stock and giving reasons for the placings made on six classes. There were four classes of cattle, three classes of hogs, two classes of sheep, and one class of horses. The variation in the number of classes was due to an attempt by the officials to adjust the contest to the interest of the country in

By winning the contest the Kansas Aggies carried away the coveted beautiful trophy which went last year to the Nebraska team. Two other trophies were awarded. One went to Cecil G. Staver of the Colorado Aggies, high man on the classes of fat stock as well as of the entire contest. The other went to R. W. O'Hara, high man on the classes of breeding stock. These trophies and other prizes were presented the night following the contest at a banquet given by the Denver Stock Yards Company, which entertained the judging teams.

—T. H. G., '30.

NEW MEMBERS IN ALPHA ZETA

(Continued from page 72)

The local chapter has just announced the pledging of 14 new members. They will be initiated March 21 and the spring initiation banquet will be March 22. Those acquainted with the men recently honored know they are worthy of the honor. They will uphold the standards of the fraternity. These men are:

Name	Seniors	Home Address
Floyd A. Blauer.....		Stockton
Roy E. Bonar.....		Washington
Albert Brown.....		Circleville
C. Raymond Curtis.....		St. John
Theodore R. Freeman....		West Plains, Mo.
Marion L. Russell.....		Garden City
James H. Sutton.....		Ensign

Juniors

Glenn C. Isaac.....	Baldwin
Oliver G. Lear.....	Stafford
S. Roger Stewart.....	Vermillion
Merrill M. Taylor.....	Perry
J. Allen Terrell.....	Syracuse

Sophomores

Fulton G. Ackerman.....	Lincoln
Bruce R. Taylor.....	Alma

Albert M. Watson, '28, is employed by the Great Western Sugar Company and is located at Windsor, Colo.

E. B. Coffman, '28, is located at Kansas City, Mo., and is assistant marketing specialist for the Hay Inspection Service, Bureau of Agricultural Economics, U. S. D. A. His office address is 1515 Genesee St.



AGS ELECTED TO PHI KAPPA PHI FIRST SEMESTER

Left to right: H. P. Blasdel, A. W. Miller, L. W. Koehler.

each class of live stock as manifested by the exhibits at the show.

Prof. H. H. Kildee, head of the department of Animal Husbandry at Ames, Iowa, placed all the classes and took all the reasons given by the contestants. Out of a possible 4,000 points the team placings were as follows:

Kansas Aggies	3,390
Colorado	3,266
Nebraska	3,261
Wyoming	3,255
Utah	3,198

High individual honors went to Cecil G. Staver of Colorado with R. W. O'Hara of Kansas, second; J. A. Terrell of Kansas, third; and Paul Chilen of Kansas, fourth.

FARM NOTES

K. S. A. C. ALUMNUS IS STATE CHAMPION CORN EXHIBITOR

As an exhibitor of corn O. J. Olsen, '07, has no equal in Kansas. Each year since 1923 he has selected the samples of corn which have taken first prize and sweepstakes over all varieties at the Kansas State Fair. In the state blue ribbon corn show, held in connection with Farm and Home Week last

As a student in K. S. A. C. Mr. Olsen was prominent in both live stock and crops judging. He was a member of the Aggie team at the International in 1906 and was second high individual in the entire contest that year.

After graduating from college Mr. Olsen took up farming on the farm on which he now lives. He has raised and bred up, since



HIGH TRIO IN STATE CORN-GROWING CONTEST

From left to right: V. P. Rush, O. J. Olsen, and Joe Brox. O. J. Olsen was the winner of the state blue-ribbon contest. He is holding his exhibit of state blue-ribbon corn. Joe Brox was named 1928 state corn champion in the five-acre contest.

month, Mr. Olsen's ten-ear exhibit was awarded first prize and sweepstakes. The accompanying illustration shows Mr. Olsen holding his prize-winning sample of corn. Mr. Olsen won a similar distinction last year in the state blue ribbon corn show.

1907, a variety of corn which he calls "Bellmont," and which most of the neighbors call, "Olsen Yellow Dent." He has been an exhibitor of corn off and on since the time he graduated from college. He is a keen judge of corn and a very good selector. He started

exhibiting at the corn shows that were formerly held in connection with the Farm and Home weeks at Manhattan, also at the National Corn shows which were held all over the United States. He is one of the few men who have stayed with the game of showing corn since 1907. Not only does he raise corn but he believes in a good system of crop rotation. He maintains a select herd of grade Herefords, also has a good herd of Duroc Jersey hogs. Along with live stock he believes in legumes for maintaining the soil fertility. He has been growing alfalfa for 17 years, the field off of which he took his champion 10 ears of corn this year, being a field which had been in alfalfa off and on for 17 years.

Mr. Olsen is a community worker. He is a member of the board of education of the Willis Rural High School and takes an active interest in church and community affairs. He was largely influential in getting the farm bureau started in Brown county, and has been a member of the executive board since it started.

One of the fine things about Mr. Olsen is his educational point of view. He has shown his neighbors the proper types of corn to select for planting. Proof of this is surely borne out each year in the Brown county corn show. There is no other county show in the state where so much good quality and so many uniform samples of corn are exhibited as in the Brown county show.

STATE BLUE RIBBON CORN SHOW

An exhibit of unusual interest during Farm and Home Week was the State Blue Ribbon Corn Show. Any winner of a blue ribbon in a county contest last fall could enter a ten-ear sample of his blue ribbon corn in this contest. O. J. Olsen of Horton, who won this contest, was also the winner of a similar contest last year.

—L. E. W., '16.

HIGH TRIO IN STATE CORN-GROWING CONTEST

Fourteen counties finished in the Kansas five-acre corn-growing contest. These county winners competed for state honors during the recent Farm and Home Week at K. S. A. C.

Joe Brox of Atchison was named state champion. His five-acre field of Reid Yellow Dent corn made a yield of 109.96 bushels per acre. O. J. Olsen of Horton placed second. He grew Bellmont corn, a selection of Reid Yellow Dent, and had a yield of 105.24 bushels per acre. V. P. Rush of Severance placed third. His yield was 109.29 bushels per acre but the quality of his sample kept him from the top. He was state corn champion in 1926.

THE GOFF BROTHERS ARE PROSPEROUS AND HAPPY FARMERS IN RILEY COUNTY

Merle E. Goff, '23, and Harold A. Goff, a freshman in the Division of Agriculture this year, operate a diversified farm of 210 acres on rural route 8 out of Manhattan. They have 150 acres under cultivation. At the present time they have 42 acres of alfalfa. The boys give four main reasons for raising alfalfa: Its high yield; its value as a feed on the farm; its value as a cash crop; and its value as a soil-improving crop.

The boys aim to have 10 to 20 acres of sweet clover available each year for pasture for dairy cows and horses. Last year they had 45 acres in corn and harvested it with a mechanical corn picker. They also raised 15 acres of certified Atlas sorgo for seed and silage. They report that this new crop, recently produced at K. S. A. C., was a success beyond expectation. Ten to twenty acres each of wheat and oats complete the acreage in crops on the Goff farm.

The Goff brothers aim to equip the farm for larger live stock operations within the next few years. They will increase their dairy herd and raise more hogs. They are alert students of improved farming practices. Last year they sold their hogs on the peak of the market. A close study of market conditions including K. S. A. C. market forecasts helped them to do this. They are members of the dairy herd improvement association and the county farm bureau.

In the Riley county five-acre corn contest of 1928 these boys carried off first honors, raising 99.25 bushels of corn per acre.

—Ed.

W. W. Rodewald, '20, is farming at Eu-dora, Kan.

THE STATE CHAMPION WHEAT GROWERS' CONTEST

The 1928 harvest marked the third crop year in the Kansas five-year wheat-belt program. K. S. A. C. is but one of a number of cooperating agencies in this great wheat-improvement drive.

One phase of the annual program is the state champion wheat growers' contest sponsored by the Kansas City, Mo., Chamber of

Commerce. County champions are selected and these compete for the state championship, the champion being announced at the annual Farm and Home Week banquet of K. S. A. C. The state champion is awarded a silver loving cup and \$300. The farmer placing second is awarded \$200 and \$100 goes to the farmer placing third.

The accompanying illustration shows 16 of the county wheat champions who entered



A GROUP OF THE COUNTY WHEAT CHAMPIONS, 1928

Back row, left to right: Challendar, Luft, Habiger, Billings, Kolarik, Weathered, Middle row: Long, White, Hertlein, Hayden, Murphy, Ott. Front row: Bertram, Saunders, Barger, Cunnea. (See table of county wheat champions.)

County Wheat Champions, 1928

COUNTY	CHAMPION	POSTOFFICE	Test wt. per bushel Lbs.	Per cent protein	Yield per acre Bus.
Rice	F. J. Habiger	Bushton	64.0	13.05	41.00
Kingman	Charles Weathered	Norwich	64.0	13.00	17.24
Sedgwick	J. B. Ott	Wichita, R. 7	64.0	10.55	29.00
Harper	T. G. Saunders	Anthony	62.0	12.76	26.30
Sumner	Manuel Kolarik	Caldwell	61.0	13.05	25.00
Harvey	A. R. Challendar	Sedgwick	61.5	12.05	26.43
Pratt	C. F. Hertlein	Pratt	64.0	11.50	25.50
Kiowa	Frank R. Bertram, Sr.	Greensburg	66.0	11.10	28.00
Comanche	A. J. White	Coldwater	60.0	12.10	32.00
Clark	C. F. Murphy	Minneola	63.0	13.32	48.08
Meade	L. J. Cunnea	Plains	55.5	12.70	50.00
Ford	W. A. Long	Fowler	62.0	13.60	33.06
Hodgeman	Wayne G. Billings	Jetmore	61.0	55.33
Ness	W. V. Stutz	Utica	61.0	11.50	40.00
Pawnee	W. A. Barger	Garfield	65.0	13.50	44.42
Barton	W. D. Esmiller	Great Bend	63.5	11.00	30.87
Rush	John Luft	Bison	64.5	12.60	38.50
Reno	F. E. Tonn	Haven	61.5	15.35	40.20
Sherman	R. J. Hayden	Ruleton	59.0	11.83	32.20
Russell	Alex Schultz	Hoisington, R. 1	64.5	10.85	32.00

into competition for the Kansas champion wheat grower of 1928. The complete list of county champions is given in the accompanying table.

The state championship for 1928 was awarded to Mr. W. A. Barger of Garfield, Pawnee county. A view of his home is shown on the "Contents" page. He has farmed for 30 years. Last fall he sold 10,000 bushels of seed wheat in his county. Every bushel had been treated for smut. He has 710 acres of growing wheat at the present time. The Division of College Extension annually supervises test plots in a number of the leading wheat-growing counties of the state. One set of these plots is located on Mr. Barger's farm. June 17, 1929, has already been named as field day at these plots.

Mr. C. F. Murphy of Clark county was awarded second prize among the 1928 contestants and Mr. John Luft of Reno county, third. Mr. Luft is the youngest man to win prize money during the three years the contest has been held.

—C. E. Graves, '21.

A MITCHELL COUNTY MAN'S EXPERIENCE WITH A MECHANICAL CORN PICKER

That the mechanical corn picker should be used as early in the season as possible was demonstrated through its use on a Mitchell county farm last fall. The machine will work efficiently as long as the corn is standing and the ears remain on the stalks. However, if there is considerable wet weather and freezing and thawing the stalks will become rotten, the ears will fall off, and the corn go down. If the stalks are rotten they will break off at the ground as the picker passes over them and either be thrown to one side or clog up the shucking rolls. Moist or damp weather favors cleaner shucking and, in contrast to hand shucking, the "tougher" the corn is the cleaner it will be shucked by the machine.

The mechanical corn picker at present has many rapidly moving parts and consequently must be oiled regularly and watched carefully. A strong wind blowing against the rear of the machine will sometimes clog up the shuck chain and hold the shucks in the machine. This, however, is seldom serious.

It is the opinion of Prof. W. H. Sanders of the Department of Agricultural Engineering that some day a manufacturer will build a two-, three-, or four-row machine of sturdy enough construction to stand up. There is need for a larger machine than a single-row and although there are at present several two-row machines on the market, in the opinion of Professor Sanders, none of them are mechanically strong enough to be satisfactory and economical.

—C. P. M., '30.

WHEAT STORAGE ON THE FARM

Wheat farmers are going to be compelled to make radical changes in their storage and marketing methods on account of the great increase in the use of the combine. The present plan is to deliver a large part of the crop direct from the field to the elevator, which results in a mad rush for a space to unload and makes it impossible for the elevators and railroads to get it out of the way fast enough. This plan temporarily has the effect of overloading the market and offers no opportunity to sell the wheat at a good price or according to its quality.

The miller knows that wheat containing as much as 14½ per cent moisture will bin burn and a small per cent of heat damage in wheat will make a poor quality of flour, consequently he has been in the habit of discounting to a certain extent for new combine wheat.

Too much rush during harvest is responsible for an enormous quantity of low-condition wheat. The proper place to dry combine wheat is in the field before it is harvested. Combine wheat can be stored satisfactorily on the farm if the crop is allowed to mature before beginning harvest; if the dew is allowed to dry off before starting the machine in the morning; if the farmer waits until the grain is thoroughly dry after a wet spell; if green patches of wheat and weedy patches are not combined; and if wheat from green and weedy patches is not mixed with other wheat.

Almost any kind of water-proof bin is suitable for storing wheat that is known to be dry. However, a large portion of the combine wheat carries too much moisture for

safe storage unless special provision is made for drying it. Properly ventilated bins will take care of ordinary wheat, but if wheat contains excessive moisture a rehandling system will be required in which the wheat can be aerated and dried while it is being moved from one bin to another. An inexpensive storage unit is now available and in addition there are a number of satisfactory ventilated bins on the market. Only a storage unit for wheat that provides for proper ventilating, aerating, and rehandling should be installed in combine areas. Some of these units are arranged so the wheat can be dried by draw-

ing it unnecessary to dump wheat on the ground. It will tend to prevent congestion of the July and August market, thus helping to stabilize prices. And above all it will provide a splendid opportunity to dispose of the crop at such prices as its protein content and other qualities will justify.

—J. H. G., '30.

SEED BED PREPARATION PAYS

A good demonstration of the value of early preparation of the seed bed for wheat in Allen county was shown last summer. There were three fields on adjoining farms that had



PASTURING SHEEP NEAR SOFIA, BULGARIA

In Bulgaria there are five and one-half million people, 80 per cent of whom depend on agriculture. There are in the country about eight million sheep. The fellow in the picture pastures the sheep of five or six peasants who hire him from April 1 until November 1. During the winter each farmer feeds his own sheep at home in his yard.

—K. P. N., '28.

ing it from the bottom of the bin and running it back into the top of the same bin with an elevator. Ordinarily it will be necessary to handle the wheat only two or three times.

There are many reasons why more farm storage is needed. In the first place it will assist in establishing a more orderly system of marketing. Wheat can be stored rather than dumped on the market at an unfavorable price. This will help the farmer because he will get a higher price for his product and it will help the country elevator handle the wheat in a satisfactory way. It will help solve the car shortage problem and will make

about the same kind of soil and were given about the same treatment except the time of preparation. For convenience I shall refer to these fields as A, B, and C.

Fields A and B were plowed in July and let lie until shortly before seeding time. Field C was plowed after September 1 and worked down and seeded in about two weeks later. All three fields were seeded to Black-hull wheat at about the same time, except a small part of B which was left until the middle of November because it was too wet to work.

The grain was cut and shocked and

threshed from the shock with but one small rain on it after cutting. The threshing was done by the same machine and the grain sold over the same scale. Field A produced 27 bushels per acre; B, 28 bushels; and C, 15 bushels. The test weights were, A, 62 pounds; B, 64; and C, 59. It cost 12.5 bushels per acre and 4 pounds per bushel test to let field C wait until September before it was plowed.

—R. F. P., '30.



MERLE E. GOFF, '23

WINNERS OF THE 1928 RILEY COUNTY CORN-GROWING CONTEST DISCUSS THE KANSAS CORN IMPROVEMENT PROGRAM

The corn improvement program of Kansas is sponsored by the Kansas City, Mo., Chamber of Commerce and the Kansas State Agricultural College. It is conducted by the Kansas State Agricultural College in cooperation with the county agricultural agents of the corn belt. The Kansas City Chamber of Commerce provides a pure-bred gilt or a pure-

bred boar ready for service to the winner of each county corn-growing contest. The Kansas State Agricultural College oversees the conduct of the contests.

The champion corn grower of each county is determined at a county corn show held shortly after harvest. In this show the yield of the corn counts 40 per cent of the total score. The other 60 per cent is based on the quality of a two-bushel sample of seed corn submitted by each contestant. The qualities considered in judging these samples are rate of germination, purity, uniformity, type, maturity, and freedom from disease.

The samples of corn become the property of the show and are sold at public auction. The money thus secured is used to defray expenses and to make up a list of 10 prizes.

The purpose of the contest and show is to bring before farmers more vividly all the phases of proper corn growing. The results are far reaching. This truth is expressed by many who go through the contest. Each person carries some new information away with him whether he is winner or loser. There would be little justification for the organizations previously named and local financial supporters to provide prizes for a few winners if the benefits did not reach all.

The contest crystallizes the thought of each person entering. A person may have his own prejudices of corn growing and seed selection, or he may have an accurate information regarding requirements and methods, but it is only when this information is applied and the results measured in the contest that he really learns.

It is interesting to note that an adapted variety of corn grown in a good rotation is an outstanding part of the necessary requirements in producing high yields. In the Riley county contest this year (a wet year) the five high men grew Pride of Saline corn and four of them grew it on alfalfa or sweet clover ground.

We have farmed the particular field on which we won the Riley county contest for three years. It is good creek bottom land which through the force of circumstances grew alfalfa for at least 11 years followed by two years of sweet clover, one of Sudan

(Continued on page 88)

ALUMNI NOTES



B. F. Houlton, '24, is assistant manager of Fritzel's Dairy, Lawrence, Kan.

O. P. Butler, '22, is farming and running a country elevator at Farmington, Kan.

Earl J. McWilliams, '23, is principal of the rural high school at Auburn, Kan. Earl likes the teaching game and thinks he will stay in it.

C. J. Rodewald, '18, for several years has been field superintendent of the Great Western Sugar Beet Company. His address is Ovid, Colo.

Willard Welsh, '21, is editor and publisher of a new farm magazine, the "Reno County Ruralist," official publication of the Reno County Farm Bureau.

K. B. Musser, '12, secretary of the American Guernsey Cattle Club with headquarters at Peterboro, N. H., was on the Dairy Day program during Farm and Home Week.

L. L. Davis, '27, recently received an appointment with the Office of Cereal Crops and Diseases, Bureau of Plant Industry, U. S. D. A. He is stationed at Aberdeen, Idaho.

George R. Campbell, '16, will remove to Minneapolis, Minn., April 1. There he will become manager of a newly organized company for the manufacture and distribution of cheese.

Ivan A. White, '20, made a short visit to his Alma Mater during February. He is now president of a strong company which is developing juice grape vineyards in the Rio Grande valley near Edinburg, Tex.

R. R. Graves, '09, specialist in dairy cattle breeding investigations in the Bureau of

Dairy Industry, U. S. D. A., was a visitor during Farm and Home Week. Mr. Graves spoke on the Dairy Day program, Wednesday, February 6.

W. R. Martin, Jr., '17, has recently been appointed extension specialist in horticulture with headquarters at Columbia, Mo. He has held a similar position in Kansas extension work since 1925 and will be missed by the fruit growers of this state.

Prof. Albert Dickens, '93, is recovering from a prolonged illness at his home, 1230 Fremont St. The whole college hopes he will soon be in his office again and the many inquiries received by mail indicate the wide acquaintance Professor Dickens has over the state.

M. S. "Ship" Winter, '23, is located as close to the Aggie gridiron as possible, St. Marys, Kan. With the aid of his better half, Fay (Young) Winter, '21, Ship says they have sold more than their quota of Chevrolets. Business is improving and Ship is expanding the agency.

Charles F. Swingle, '20, and Mildred (Berry) Swingle, '19, recently visited their parents, Mr. and Mrs. J. F. Swingle and Mr. and Mrs. J. W. Berry in Manhattan. Dr. Swingle addressed several meetings at the college. He recounted his experiences in Europe and while searching for rubber-yielding plants in Madagascar.

Mary E. Haise, '26, now Mrs. Floyd Wright, and Mr. Wright are located in Corvallis, Ore. Mrs. Wright is the first and only member of the fairer sex to date to be graduated from K. S. A. C. with the degree of bachelor of science in agriculture and majors in agricultural economics. Mr. and Mrs. Wright have a daughter 18 months of age.

KANSAS CORN IMPROVEMENT PROGRAM

(Continued from page 86)

grass, and one of sweet clover. In 1928 after sweet clover the corn thereon yielded 99.25 bushels per acre as estimated by the corn contest harvesting committee.

The handling of this field does not represent a good rotation but it does show the value of legumes to high corn yields in a favorable season.

—Merle E. Goff, '23.

Harold A. Goff, '32.

RAISING TURKEYS

(Continued from page 70)

per bird than is ordinarily provided in brooding chickens. A floor space of 1 square foot per poult is sufficient up until they are 12 weeks of age. From this time up to 16 weeks of age they make an exceptionally rapid growth and must, therefore, be given from 4 to 5 square feet of floor space per poult.

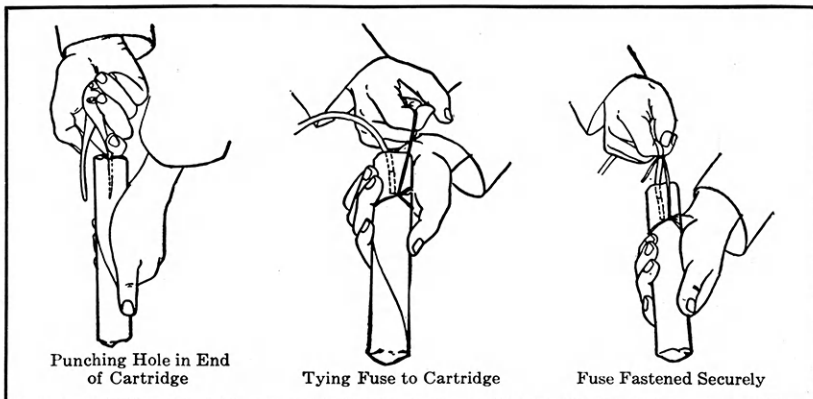
When 16 weeks of age the turkeys are taken from the brooder house and moved to

a restricted alfalfa range. At that time they come in contact with the soil for the first time in their lives. If reared up to this period free from parasites and disease, there is little danger of heavy losses occurring. They are old enough to ward off the common ailments affecting turkeys. Three acres of this restricted and fenced area will accommodate 100 turkeys very nicely. Two grain hoppers and two mash hoppers should be located in different parts of the range. Oyster shell should be available at all times in open buckets. Turkeys 16 weeks of age need little if any shelter other than shade and a place to roost. A roosting platform 16 feet square and 6 feet high erected near the center of the range is satisfactory for 100 turkeys. The roosts proper may be made of 2 by 4 material spaced 2 feet apart. Other than filling the hoppers several times each week and supplying water daily, the turkeys at this time require very little attention or care until time for market.

Do turkeys reared in confinement make

	AG FAIR	
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	Pike Open 3:00 to 12 P. M.	
	Three Big Shows: Follies, Minstrels, Rodeo	
	Educational Exhibits Side Shows—Concessions—Eats	
	BIG DANCE—8 P. M.	
	Ninth Annual Performance	DON'T MISS IT
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PRIMING

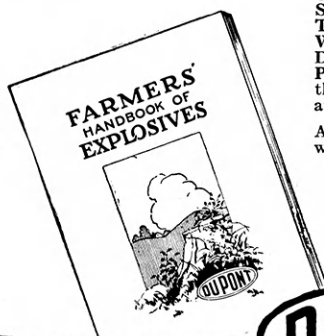


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a satisfactory growth? The answer is, "Yes." As proof, the following figures are submitted:

AGE	AVERAGE WEIGHT PER POULT
1 day	0.11 pounds
4 weeks	0.71 pounds
8 weeks	2.38 pounds
12 weeks	4.79 pounds
16 weeks	7.85 pounds
20 weeks	11.40 pounds
24 weeks	14.18 pounds

The males average 16.8 pounds and the females 10.9 pounds at 24 weeks of age.

It would appear to the writer that the confinement method of rearing turkeys as outlined above would have great possibilities in the western part of Kansas. Questionnaires answered by many western Kansas turkey growers reveal the fact that astounding losses occur during the early life of the poults. Poults ranging with turkey hens are unable to protect themselves from cold rains, hail storms, etc.

A little capital invested in good brooding equipment would be money well spent. Reared in confinement with clean quarters, the poults could be turned out at 12 or 16 weeks of age and ranged over the stubble fields where waste grains and insects would almost entirely take care of the feed question.

FARM TENANCY

(Continued from page 71)

The Corn Belt section is made up of 17 counties in northeastern Kansas and has a total population of 511,139, 39 per cent being farm population. This region has approximately 31 farm people per one thousand acres of farm land and a total of 16,146 tenant farmers. Tenancy increased only 2 per cent during the period 1910 to 1925. At the present time 41 per cent of the farmers are tenants.

The General Farming section includes 17 counties in southeastern Kansas with a total population of 433,686, 45 per cent being farm people. This territory is the most thickly settled of the six sections, having 36 farm people per one thousand acres of farm land. There are 14,529 tenants in this section. Conditions of tenancy have been the reverse of the other five sections. A de-

crease from 40 to 38 per cent in number of tenants from 1910 to 1925 may be accounted for by the change in type of farming. Dairying is making rapid strides in this section and tenancy is likely to be lower in such a region.

In studying the different areas in Kansas it seems that tenancy increases as the territory becomes older up to a certain point where change in type of farming may affect the per cent of tenancy. Size of farms may also influence the amount of tenancy. In new territories farms are more likely to be large and tenants fewer.

ATLAS SORGO

(Continued from page 68)

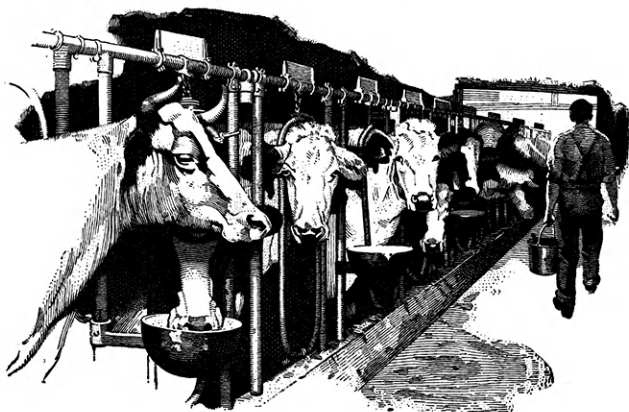
as silage or bundle feed the small per cent of off-type heads is of no consequence. The members of the Department of Agronomy have recently voted to recommend to the directors of the Kansas Crop Improvement Association that Atlas sorgo be approved and certified as a standard variety for eastern Kansas.

THE MILLER AND DAMAGED WHEAT

(Continued from page 73)

verizing the outside. This is possible because the bran coat and the germ are a little tougher than the endosperm. If it was not for this difference, there would be no milling. There would be only crushing of grain, no separation by sifting, and there would be no white flour. Wheat damage makes the bran more brittle, and it is much more difficult for the miller to separate the bran from the endosperm and make a white flour.

In the third place wheat damage decreases the stability of the flour. By stability is meant the length of time that the flour will remain in a first-class condition. Stable flour is one that will bake just as good bread six months from the time it was milled as during the first week after milling. Unstable flour will soon go out of condition, that is, while it might give satisfaction if used in the bake-shop within a few weeks after milling, it will make trouble if it is used several months after milling. When a mill makes several thousand barrels a day and this flour is shipped to many parts of the world the miller



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When farmers have worked with G-E electric equipment they realize what it was that they had always lacked on the farm—electricity.

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

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If you are located on or near an electric power line, ask the power company for complete information concerning the possible uses of electricity on your farm.

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does not know when this flour will be used and he does not dare to take chances.

In the fourth place, the greatest demand on flour is uniformity. Competition among millers is very keen. If a certain carload does not give satisfaction the miller stands the chance of losing a customer. It is difficult to make uniform flour when wheat is damaged mostly because no one can tell accurately just how much it has been damaged. If the damage is very slight, no harm may result. If the damage is very extensive, then it will make trouble for the millers.

Some grain men contend that the millers use a small amount of damaged wheat, and that they can do this without any serious consequences. This all depends upon the mill. If a mill serves a restricted territory and knows when its flour will be used, it probably can do this without any serious risk. It may also be able to use a small amount of damaged wheat if the rest of the wheat is absolutely free from damage, but in a year like 1928, the damage was so extensive that there was comparatively little wheat that was absolutely free from all damage.

The greatest difficulty is that the extent of the damage cannot be told by physical inspection. If the damage extends only to the germ, it is not so serious. If it has made the bran more brittle it will cause trouble in milling as pointed out above. If the damage extends to the endosperm then the quality of the flour has been impaired, and such damage will make trouble in the bakeshop. The greatest trouble with 1928 wheat is there is much more damaged wheat than can be absorbed by the mills and hence the problem which is always associated with any surplus.

R. E. Cleland, '22, is spending his sixth year as athletic coach and teacher of vocational agriculture in St. Francis Community High School. He reports that his children consist of two future Aggie halfbacks.

O. L. Pretz, '24, and Edward Watson, '24, are dairy advisors for the Kansas City Consumers League. The address of Mr. Pretz is 220 N. Twenty-third St., Kansas City, Kan., and of Mr. Watson, 512 E. Sixty-first St., Kansas City, Mo.



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Harry Hubbard of Greenfield, Ark. had to haul his rice to his Case thresher on mud boats, but he saved the whole crop.

Ownership of a Case thresher enabled L. Baker, of Woodstock, Ill., to save his own 200 acres of grain before the floods damaged it. Then he turned in to save what he could of his neighbor's weather-damaged grain.

A grain grower never knows when he is going to run into difficulties at threshing time. Somewhere there are always untimely rains, floods or early snows, and the profit from the grain crop is gone unless his thresher can handle wet, tough grain.

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Bovine Infectious Abortion Control

E. Lynn Watson, '29

Bovine infectious abortion is an infectious disease produced primarily by the *Bacillus abortus* of Bang or in the newer nomenclature it is called *Alcaligenes abortus*. This organism was first isolated in 1897 by Dr. Bang, a Danish veterinarian. The disease caused by this germ has been found in many localities of Europe and it is commonly found in the United States. Formerly the disease was considered as contagious.

The disease is common to cattle. Swine have become infected by following the cattle, and a few cases have been reported of humans becoming infected by using the milk from cows which had the disease. In humans the symptoms of the disease are not typical, but instead resemble those of Malta fever. The live stock industry estimates that the economic loss caused by this disease is greater than the combined losses of all other diseases of live stock, and it is now so great that practically every agricultural experiment station with veterinary facilities is doing some investigations upon the disease.

Up to the present time two methods of control are being used which are: (1) Use of sanitary precautions and isolation of infected animals, and (2) treatment with bacterins and vaccines. The isolation system is really a modification of the Bang system for the eradication of bovine tuberculosis.

Briefly the isolation system is as follows: The animals in a herd are tested at fairly regular intervals for the presence of infection. This is done by means of a laboratory test performed upon a sample of blood taken from each animal in the herd. Any graduate veterinarian is capable of taking these samples. The infected animals are then isolated or separated from those which are not infected and maintained so that nothing from the infected group comes in contact with the group which is not infected. In order to carry out this isolation buildings separated at some distance from each other should be used to house each group, also separate pastures divided by a double fence. The distance between the fences should be five or six feet. Each group must have its own water tanks, feed bunks, and if it is possible the at-

tendants for each group should be different. In case it is not possible to have different attendants the chores about the clean herd should be done before those of the infected herd. Boots or overshoes are to be worn while working with the isolated herd and the same overshoes must not be worn elsewhere. Whenever a cow aborts the refuse should be burned and the ground thoroughly disinfected with a strong disinfectant. It is preferable to pasteurize the milk from the infected herd although this is not necessary.

If it is more desirable the infected herd may be sold. This would not interfere with the working of the plan.

The herd should be retested occasionally in order to detect the presence of any newly infected animals or of those which may have had the disease in the incubation stage at a previous test. Experiments have shown that calves nursing from an infected cow do not become permanently infected by this means. A somewhat recent discovery about the disease is that it is transmitted primarily through the digestive system and not through the reproductive system as was formerly believed. Also it has been found that some cows although they are infected may never abort. Such cows are quite dangerous to the others in a herd because they serve as carriers or spreaders of the disease.

This plan has been in operation in several herds in this state for some time and is rapidly being adopted by others. Abortion rates in the herds where it is used have dropped to practically nothing. A general adoption of this plan would serve as a means for the eradication of the disease.

Control of the disease by the injection of bacterins and vaccines is still in the experimental stage and the results so far obtained are rather unsatisfactory. The immunity produced by the bacterins is short and slight. The vaccine, which is composed of the living germs causing the infection, when injected into pregnant cows is likely to cause them to abort. When the vaccine is used in the neighborhood of other herds there is danger of their becoming accidentally infected. In

(Continued on page 96)

The Fish Pond on the Farm

Edward Schneberger, '28

Within recent years the Kansas Forestry, Fish, and Game Commission has been following a program of game conservation and of restocking the state with game adapted to Kansas conditions. Their slogan, "Build a pond, plant a bush, grow a tree," is known to every Kansas citizen. The Kansas Forestry, Fish, and Game Commission and the Department of Zoology of K. S. A. C. are under a cooperative agreement, under which the Department of Zoology has members of its staff carry out experiments and field investigations to help solve the fish culture problems of the commission. Dr. Minna E. Jewell and the author have carried on this work for the past year and at present are working on the nutrition of catfish.

The topography of many of the farms in Kansas is such that a pond of one to three acres in area could be constructed at a small cost. Many farms already have small ponds that are being used for pasture water supply. With only a little additional labor these ponds could be made into good fish ponds. The ideal water supply for a fish pond is a spring, but this is not always available. Another source is surface water from rains. This water is muddy as it carries with it soil particles. The turbidity is increased when surface water comes from cultivated fields. This can be overcome in part by terracing or damming to allow the water to settle before it enters the pond. These dams may be of woven wire and straw type or stone walls, and serve a three-fold purpose: First, they prevent erosion of cultivated lands; second, they prevent the rapid filling of the pond with mud; and third, they provide a better water supply. A third source of water supply is a good well and windmill. If a reservoir is made and water pumped into it, the water can be used for watering cattle or even irrigation of truck gardens, as well as a fish pond.

After the pond is completed it should be stocked with vegetation. From 10 to 40 per cent of the bottom area should be vegetated. Of the aquatic plants, chara, myriophyllum, and ceratophyllum are highly desirable, while water lilies, cat-tails, and sedges are unde-

sirable. The former plants are good oxygenators as well as fish food plants. By a fish food plant is meant a plant that will provide food and shelter for the small animals such as daphnia, fresh water shrimp, snails, nymphs, and aquatic insects upon which fish feed. Water lilies, cat-tails, and sedges are poor oxygenators and fish food plants, and if unmolested in a pond they will completely take the pond, converting it into a marsh. A few water lilies add to the beauty of a pond, but they must be kept under control. The plants should be started early in the spring about April or May. In some ponds it is necessary to make a small wire pen to hold the vegetation in place until it has started to grow.

The kind of fish to put into a pond depends upon the type of pond and the fancies of the pond owner. Among the fish suited to Kansas conditions are the black and yellow bullheads, spotted channel cat, bluegill, crappie, small- and large-mouth black bass, and fresh water drum. The yellow or ring perch and the rock bass are sometimes recommended. However, the former is not particularly well adapted to Kansas conditions while the latter is usually disappointing as a game fish and has flesh of mediocre quality.

The members of the catfish family, especially the bullheads, are well adapted to the pond conditions of Kansas. They are prolific, rapid growers, and will withstand high turbidity and stagnant water better than any of the scaled fish. The yellow bullhead (*Ameiurus natalis*) makes a faster rate of growth and grows larger than the black bullhead (*Ameiurus melas*), although it is not so hardy. The flesh of the bullhead is rather dark but tender and of good flavor.

The spotted channel catfish (*Ictalurus punctatus*) is a popular game fish among sportsmen. It puts up a fight equal to that of the black bass. It is unfortunate that this species will not reproduce in a pond, as shallow running water seems to be necessary for the development of the young. They make good rapid growths in a pond, and many pond owners follow the plan of restocking their pond every year with a few channel catfish.

Mr. Seth Way, fish culturalist at the fish hatchery near Pratt, has succeeded in hatching and rearing channel catfish in troughs. His "incubator" for hatching catfish eggs consists of a trough of running water, which is further agitated by a system of paddles keeping a good circulation of water through the eggs. Such methods are, of course, too complicated to be employed on the farm. When full grown this fish weighs from 10 to 12 pounds. The flesh is white, firm, and of excellent quality.

The bluegill (*Lepomis pallidus*) is a good game fish and also one of the nicest of the pan fish. The flesh is firm and flaky. It is the largest of the sunfish, weighing from 1 to 1½ pounds. The bluegill is very prolific, spawning several times during the season. It may be caught with any kind of bait and tackle and is not excelled as a pan fish by any species in the state.

Of the crappies there are two kinds in the state. They are commonly known as the black crappie or strawberry bass (*Pomoxis sparoides*) and the white crappie (*Pomoxis annularis*). The crappie's maximum weight is 2½ pounds, but the average weight is about 1½ pounds. The flesh is firm and flaky. The crappie is prized as a game fish by those who wish to demonstrate their prowess, but is rather difficult for the amateur to land.

The black basses are among the gamiest fish known. Both the large-mouth (*Micropterus salmoides*) and small-mouth black bass (*Micropterus dolomieu*) are found in Kansas. The small-mouth reaches a weight of 5 to 6 pounds while the large-mouth may reach the weight of 8 to 9 pounds. They are alike in food and breeding habits. The flesh is white and flaky and is thought by some to have the best flavor of all the game fish. However, with all these good qualities these two fishes are probably to be discriminated against when it comes to stocking a pond. They have voracious appetites and are carnivorous and cannibalistic. They can and do eat fish nearly as large as themselves, so if they are put into a pond, one cannot expect to get many fish out of the pond.

The fresh water drum (*Aplodinotus grunniens*) grows rapidly and attains a large size. It is not valued as a game fish, but has flesh

of good quality and is adapted to muddy water where it feeds largely on crayfishes.

In general the members of the sunfish family, bass, crappie, and sunfish, feed by sight so must have water which is clear most of the time in order that they may see their food; whereas, the catfishes and drum find their food by scent, so are better adapted to muddy waters.

For the small pond of a size of 1 to 3 acres the black bass should probably be barred on account of its enormous food consumption and cannibalism. In case such a pond is supplied by surface runoff after rains, it should be stocked with bullheads and drum, with possibly bluegills in case a part of the bottom is of stone or gravel to afford them a breeding ground. Where the water supply is of a better quality, as in case of a spring or well source, the bluegill, crappie, and channel cat are to be recommended, though it must be borne in mind that unless the pond is connected with running water the channel cat will probably not reproduce.

If one wants a gamy fish, one with lots of fight when hooked, the channel cat will supply that demand.

The pond owner may get fish with which to stock his pond free of charge from the fish hatchery at Pratt, Kan. The fish are sent out in the fry and fingerling stages during the late summer and fall. This department has a Pullman fish car which brings the fish to the pond owner's nearest railroad station. Supplementing this service they have a large truck that makes deliveries over the state.

INFECTIOUS ABORTION CONTROL

(Continued from page 94)

cases where bacterins and vaccines have been used in a herd no value can be attached to the blood test for at least four months. Finally, those advocating the use of bacterins and vaccines rely upon the use of sanitary measures, isolation, and the use of the blood test, which is the essential part of the isolation system, on newly purchased animals.

Paul J. Englund, '17, is farming near Falun, Saline county. Mr. Englund was high man on the K. S. A. C. live stock judging team that won the intercollegiate contest at the American Royal in 1916.

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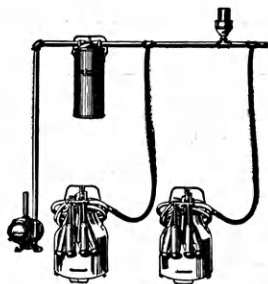
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