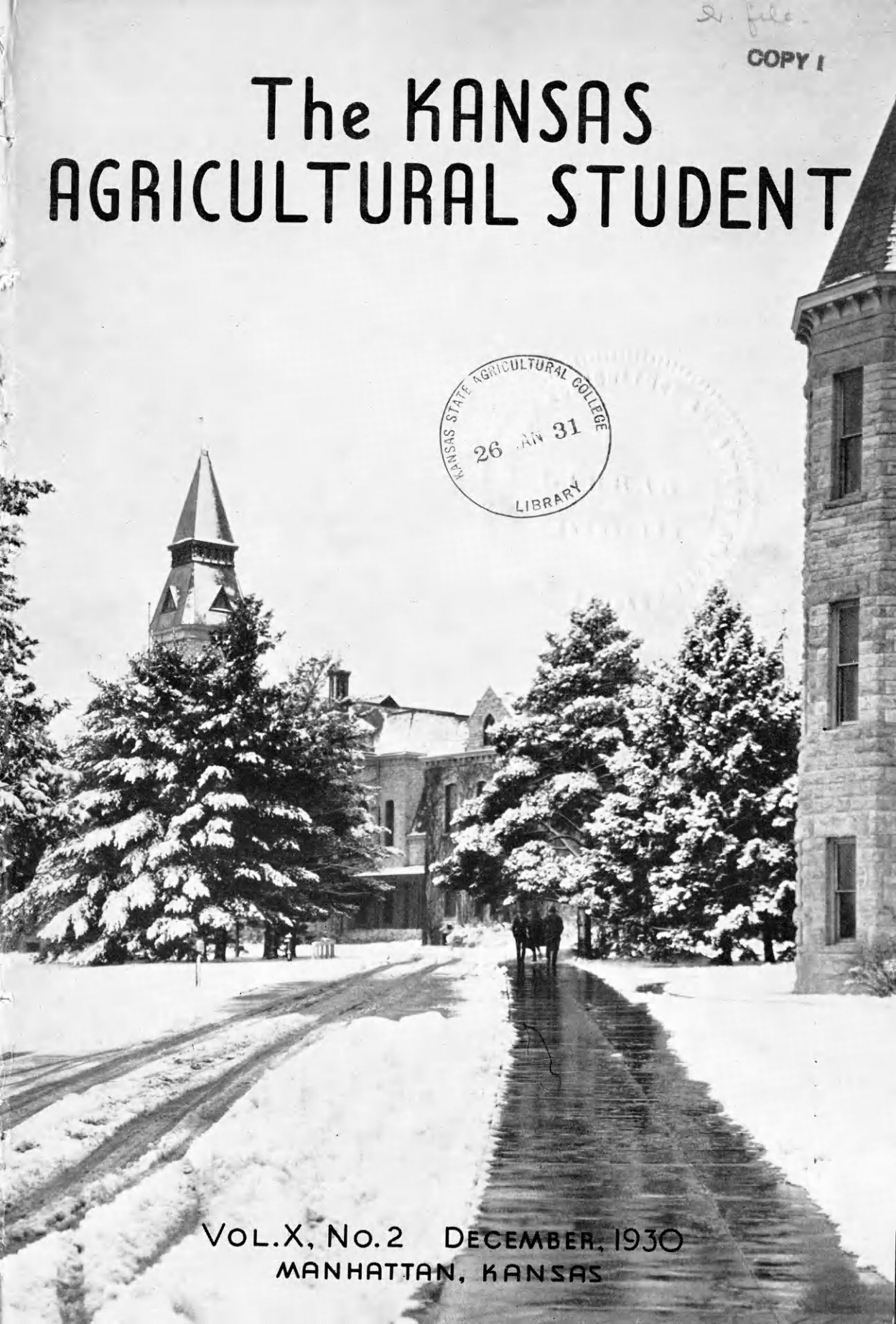
The KANSAS AGRICULTURAL STUDENT



VOL. X, NO. 2 DECEMBER, 1930
MANHATTAN, KANSAS

De Laval Milkers

Have an Overwhelming Lead

JUST as the De Laval Separator has an overwhelming lead over all other makes, both in numbers in use and in popular acceptance, so does the De Laval Milker lead in its field.

Every investigation of a widespread nature reveals that there are now more De Laval Milkers in use than of any other make, and that when it comes to the kind of machine prospective users intend to buy, De Laval Milkers have an overwhelming preference.

The most recent investigation to come to hand is that made by *Electricity on the Farm* among its 200,000 readers, who are scattered from coast to coast. Among other questions which they asked their readers was whether or not they owned a milking machine and if so what make; whether they planned to buy a milking machine and if so what make. The results of this questionnaire are as follows:

	Brand Name	Percentage Now Owned	Percentage Machines Desired by Those that Plan to Buy
1.	De Laval Milker	30%	75%
2.	.....	14%	11%
3.	.....	10%	2%
4.	.....	8%	—
5.	.....	10%	1%
6.	.....	10%	1%
7.	.....	5%	6%
8.	.....	5%	—
9.	.....	1%	—
10.	.....	1%	—
11.	.....	5%	2%

From the foregoing it is quite evident that the dairy world has definitely made up its mind as to the superiority of the De Laval Milker. This has been brought about by the remarkable satisfaction that thousands of De Laval Milkers are now giving in all parts of the country. There is no other equipment that a dairy farmer can own which will yield him so much profit and satisfaction as a De Laval Magnetic Milker.

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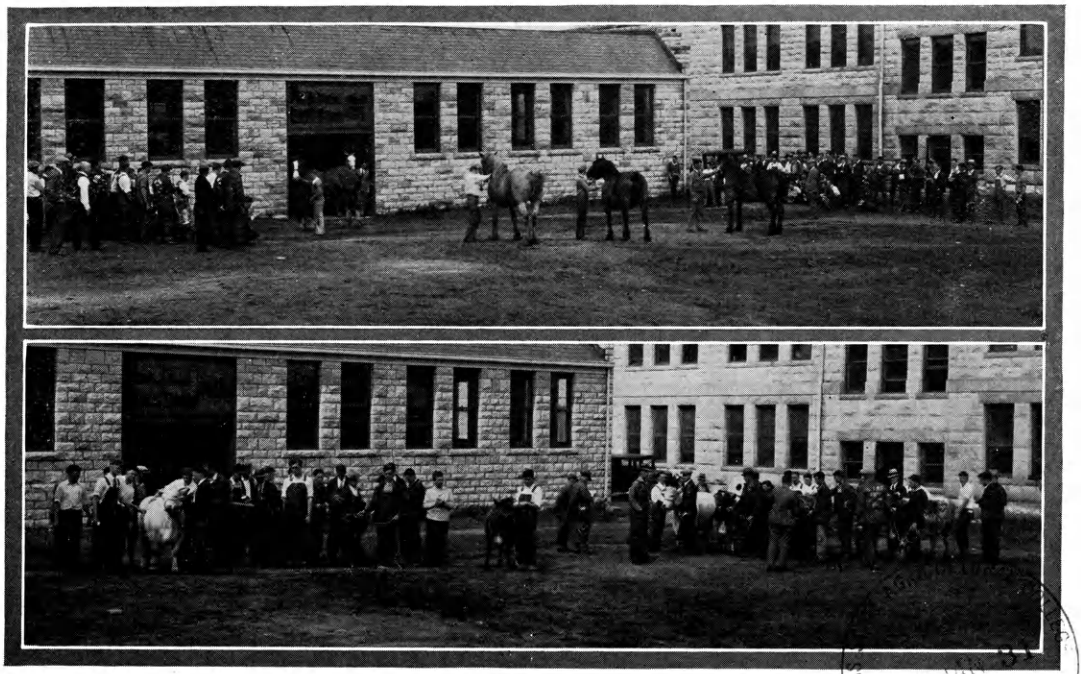

SCENES AT A K. S. A. C. STUDENT LIVE-STOCK JUDGING CONTEST

CONTENTS

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MISS MAXINE BLANKENSHIP, QUEEN OF THE FOURTH ANNUAL AG BARNWARMER

The Kansas Agricultural Student

VOL. X Manhattan, Kansas, December, 1930 No. 2

The Value of the Awn in Wheat and Barley[1]

Harland Stevens, '31

There is and has been much discussion as to whether a farmer in a certain locality should grow awnless or bearded wheat. Awnless wheats have been considered much more desirable from the standpoint of handling the crop, but the coming of the combine has made this phase of the question less important.

Several plant breeders have tried to develop superior varieties of wheat without beards. Through breeding and selection work they have developed strains that are awnless or which have only tip awns. In nearly all instances they have failed to develop awnless strains that are as high yielding as the highest-yielding bearded strains. However, Marquis, the principal spring wheat grown in the northern states and Canada, is a very good awnless wheat. It is possible that other things being equal a bearded wheat otherwise similar to Marquis would yield more. Newturk, a recent production of federal and state plant breeders in Montana, has about the same yielding capacity as Kharkov under Montana conditions.

Dr. H. K. Hayes of the Minnesota Agricultural Experiment Station crossed Marquis, an awnless wheat, with Preston, a bearded variety. He found that the bearded families had a somewhat higher average per cent of plumpness of kernel and yielded more grain per plant as shown in the following table. These two characters, yield and test weight, are very important to the farmer.

Average per cent of grain plumpness and yield of F_3 to F_5 families of crosses between Marquis (awnless) and Preston (bearded) wheats:

	Number of selections	Per cent of plumpness of kernels	Yield in grams per plant
F_3			
Awnless families (*a*)	27	70.2	5.1
Bearded families	26	71.2	5.5
F_4			
Awnless families	65	25.9	1.8
Bearded families	41	32.0	2.1
F_5			
Awnless families	48	44.0	4.4
Bearded families	43	48.3	4.7

(*a*) "Families" as used here are the product of a single plant selected the preceding year.

In 1921, Prof. George Gemmell carried on some work at the Kansas station as a crops problem in which he cut the awns off the heads of wheat at different dates to determine the effect on yield. The awns were removed from 1,200 to 1,300 heads in three rod-rows on each of three dates as indicated. All rows were harvested on June 20. The effect on yield was as follows:

Date awns were cut	Decreased yields in bushels per acre
June 1	(*a*) 5.4
June 8	(*b*) 3.1
June 16	(*c*) 0.6

(*a*) Yields: Check, 21.6; trimmed-awn wheat, 16.2.

(*b*) Yields: Check, 23.1; trimmed-awn wheat, 20.

(*c*) Yields: Check, 22.2; trimmed-awn wheat, 21.6.

The data show that there was a decided advantage in yield in favor of the checks, from which the awns were not removed. There was a relatively smaller difference in yield when the awns were removed later in the season, that is, as the crop approached maturity. This is what might be expected if the awn plays a useful role in filling of the grain.

Still more detailed studies were made in which the awns were removed from one side of the head, and left on the corresponding

1. The author is indebted to Prof. George Gemmell of the Department of Home Study Service for the data on effect of removing the awn of wheat. Thanks are also due to Dr. John H. Parker of the Department of Agronomy for suggesting the problem and for advice given in collecting and presenting the data used in this paper.

spikelets of the other half of the same head. The results from 438 heads treated in this way and threshed by hand showed decreased yields as a result of removing the awns as follows:

Date awns were cut	Decreased yields in bushels per acre
June 1	4.2
June 8	2.3
June 16	0.3

These results also show that the effect of removing the awns is much greater when they are removed soon after heading than when they are removed within a few days of harvest.

In an effort to obtain additional evidence on the value of the wheat awn, the writer made some comparisons of awnless and bearded types from the same crosses in the second generation populations grown in the crop improvement nursery of the Agricultural Experiment Station at Manhattan in 1929. Fully bearded and awnless plants were harvested and threshed separately and compared as to plumpness of kernels and weight of grain per plant. The comparison of the awnless and bearded F_2 segregates from the same crosses is shown in the following tabulation:

	Number	Plumpness of kernels, av. per cent	Av. num. of grams of grain per plant
Awnless plants	370	61.3	5.1
Bearded plants	390	69.1	6.0

These plants were spaced four inches apart in 12-inch rows in the nursery. Approximate yields per acre were calculated and found to be 19.6 bushels for the awnless and 23 bushels for the bearded types. This is an advantage of 3.4 bushels per acre in favor of the bearded types. Differences in yield of awnless and bearded types of about this magnitude have been observed in rod-row trials conducted over a period of eight years at Manhattan. Two of the most promising Marquis crosses have been included in these tests. Kanmarq (awnless) had an average yield of 33.8 bushels, while Tenmarq (bearded) had an average yield of 36.5 bushels, a difference of 2.7 bushels in favor of the bearded type.

The average yield of Kanred in the same tests was 29.6 bushels.

Harlan, of the United States Department of Agriculture, and Hayes and Wilcox, of the Minnesota Agricultural Experiment Station, have studied the function of the barley awn and found that the awn of barley is an important physiological organ. Under various conditions it has been shown that bearded varieties of barley nearly always produce higher yields than awnless or hooded varieties. In recent years plant breeders have produced several varieties of barley with smooth awns. The use of these new smooth-awned varieties will remove to a large extent the objections to handling barleys with rough awns.

Robertson and Kezer, of the Colorado Agricultural Experiment Station, have bred and distributed a hooded barley without awns which has been named Colsess. This variety is well adapted to mountain agriculture. It has also yielded well under irrigation, but is not so well adapted to the dry-land farming area.

Harlan has shown that the awn in barley is used as a storage organ for ash and that in the absence of the awn the ash is stored in the rachis or stem of the head, thus making it much more likely to break, causing the grain to shatter.

The results obtained by various investigators with wheat and barley indicate that the awn is an organ performing an important physiological function in maturing the grain. Bearded types of wheat and barley seem to have a distinct advantage over awnless types with respect to yield and plumpness of kernels or test weight, two characters of great importance to the farmer.

G. E. Hendrix, '24, is special agent of the Federal Farm Board. He is located temporarily in Manhattan cooperating with Prof. R. M. Green in farm storage studies.

Lawrence Edward Crawford, '29, county agricultural agent of Finney county, visited on the campus recently. He reports the wheat acreage large and prospects first class in his section of the state (around Garden City).

Kay H. Beach, '28, received his master's degree from Michigan State College last summer. Last September he began work as assistant professor of vegetable gardening in Texas A. and M. College, College Station, Tex.

The Annual Ag Barnwarmer

W. L. McMullen, '32

The big social event of the fall semester for the Division of Agriculture has come to be the Ag Barnwarmer. Since its inception three years ago this fall, it has been rapidly growing in favor among all members of the division, each succeeding repetition being declared the best ever. This fall's Barnwarmer was by no means an exception to this rule, thanks to an efficient manager, a good group of committeemen, and splendid cooperation from the entire division. Special recognition should be given Mr. H. W. Gilbert, who was responsible for the excellent decorations. Ag Engineers and Vets were invited, and the crowd consisted of over 300 couples.

Friday, October 10, was the date scheduled for the event. When the couples began to arrive, they found it was necessary to mount the steps to the second floor, where there was a nice long, narrow, twisty, dark tunnel of baled hay to be negotiated on hands and knees before entrance to the main floor could be gained.

The gymnasium was a sight which reminded one of a large spacious barn, and sharply impressed the fact that the autumnal season had arrived. Near the east end, constructed of baled hay and straw and decorated effectively with corn stalks, sumac, and oak branches, stood the Queen's throne. The orchestra platform was on the south side, partially screened off by a fence of sumac and other bright colored foliage. In the northwest corner the dancers were refreshed with cider and doughnuts. Bales of hay placed around against the walls furnished seats for lookers-on and for tired dancers. Corn shocks at advantageous points around the edge added to the rural atmosphere, and harness hanging from wall braces suggested that the mules had just been turned out for the night. Pumpkins, squashes, and other autumnal vegetables were in evidence everywhere.

The light question was taken care of by kerosene lanterns swinging from above, which seemed to furnish light enough to suit even the most fastidious, while the barriers of baled hay in a corner or two cut down the light sufficiently for those less fastidious. A spot-light played around on the floor from the track above all evening. The "Moon room," while possibly not so effective as it has been in previous years, drew a share of the interest.

In the girls' gym were several attractions for those who did not care to dance, the Tom Thumb golf course being perhaps the most popular attraction there.

A fluent, oily-tongued soap salesman started the ball rolling by attracting the crowd to the west end of the gym while the Queen, Miss Maxine Blankenship of Downs, Kan., was seated on the throne. Immediately afterward, Assistant Dean Hugh Durham placed the crown on her head, and the grand march started, led by Manager Leonard Stewart and the Queen. Jack Mills' recording band wearing "barnyard tux" jackets, and seated on saddles, furnished the music. Later in the evening a picture was taken of the Queen's being crowned with the Princesses at her feet. Miss Barbara Brubaker, Miss Vera Smith, and Miss Bernice Cousins of Manhattan, Miss Marie Antrim of Spivey, and Miss Hazel Bland, Garden City, were the Princesses. Much excitement was occasioned when, near the close of the dance, balloons of all colors and shapes were released from the beams above, to float down on a crowding, pushing mass of merry-makers, all eager to get their hands on a balloon.

The last dance arrived all too soon, as most last dances do, and before long the scene was almost deserted. The desertion was only a short time, however, for on this night the ardent swain needs must bid a fond but hasty farewell to his date and hurry back for clean up. Only when the last truck had taken its load of hay away, the trash fire had become a smouldering heap of ashes, and the last glass of cider was gone, did the fourth annual Ag Barnwarmer become a matter of history, pleasant memories, and weary feet.

Burton E. Colburn, '24, has been placed in charge of the Denver branch office of the National Live-stock Marketing Association. His residence address is 1551 Niagara.

THE KANSAS AGRICULTURAL STUDENT

KANSAS STATE AGRICULTURAL COLLEGE

MANHATTAN-KANSAS

VOL. X DECEMBER, 1930 NO. 2

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MISS BLANKENSHIP AS QUEEN OF THE AGS

Trust the Ags to select for their harvest queen a K. S. A. C. coed noted for her beauty, popularity, and accomplishment. Miss Maxine Blankenship, queen of the fourth Annual Barnwarmer, took the part and met every requirement in a most pleasing and acceptable way.

Miss Blankenship was a member of the Class of 1928 of the Downs High School. She had prominent parts in three high school operettas and two high school plays, and was president of both her junior and senior classes. Of her graduating class she was salutatorian.

In 1928-'29 Miss Blankenship was a freshman in the University of Kentucky, entering K. S. A. C. as a sophomore in home economics in September, 1929. She is a member of the Chi Omega sorority and one of the best known young ladies in the student body.

Our frontispiece presents the Queen in her Barnwarmer costume. The picture was selected by some of her admirers as a pleasing one, though many of her friends may criticize it for lacking her usual cordial and generous smile.

OUR JUDGING TEAMS

Another season of competition has been completed by our various judging teams with unusual success. Kansas has always been outstanding in regard to student judging teams but this last fall showed exceptional ability in that field. Some teams, of course, because of a difference in the keenness of competition and certain other uncontrollable factors, fared better than others.

The dairy products team, which was one of the first to compete, placed first at Cleveland in competition with almost a score of other college judging groups. Working with strong opposition in both contests, the grain judging team placed third at Kansas City and first at Chicago. The live stock judging team, with the longest record of competition at the college, passed one of its most successful seasons against the strongest competition in recent years. It placed first at Wichita, fifth at Kansas City, and second at Chicago. The other teams, although they were unable to make so high standings, merit an equal amount of credit and reward for their unselfish work.

Let us not forget the record these teams have made this fall. We Ags, who should be

and are especially interested in the outcome of these contests, should individually congratulate each and every member of these little groups who have done so much to put this institution among the leaders in its field. The coaches of the teams are always deserving of more credit than they receive for their unselfish work and undivided attention in instructing the "boys."

Another group, the junior live stock judging team, is "hard at it" at the present time. They do not compete until after the Christmas vacation. Let's all get behind them and give them all the help and encouragement possible. It's the least we can do.

OUR ADVERTISERS

We hope our readers will not forget our advertisers. They are substantial supporters of the magazine. When you or your friends have need for the services or material advertised by these substantial business men or firms, give them a trial.

AGGIES WIN CHICAGO SADDLE AND SIRLOIN CLUB MEDAL ESSAY CONTEST

For making the best showing of any college of agriculture in the United States and Canada in the annual Chicago Saddle and Sirloin Club essay contest, K. S. A. C. contestants again brought home the Sterling Silver Cup. It is only within the last few years that our students in agriculture have been given the encouragement that resulted in their taking this contest seriously and giving it sufficient time and effort to make a creditable showing. The last cup was won by Illinois. In 1928 a new cup was put up and carried home by Tennessee. In 1929 Aggie contestants carried off the honors and brought home the cup. Clarence M. Dunn, '30, of Oskaloosa placed third, being the high man of our group of contestants. Others in the best 20 were:

	Home Address	Rank
Sam G. Kelly	Seymour, Mo.	4
C. C. Eustace	Wakefield	7
J. J. Curtis	Toronto	8
H. S. Crawford	Bonner Springs	9
J. Edward Taylor	Manhattan	14

Of course we are proud to have our 1930 contestants follow the example of the 1929 group. Again five of our men placed among the first 20 as follows:

	Home Address	Rank
Kimball L. Backus	Olathe	2
R. W. Stumbo	Bayard	7
O. W. Shoup	Udall	12
H. C. Edinborough	Tescott	13
Ebur S. Schultz	Miller	15

The cup must be won three times for permanent possession. We have at least two more chances, but one is enough. Many of our students should begin preparation now to bring back the cup in 1931. The subject for the 1931 contest is: "The Significance of the Junior Live Stock Club."

Rather regularly in the past the judges in these contests have criticized the essays presented for their lack of practical application and, naturally, for their lack of originality. Take the hint, boys, use your experience and think your problem through. C. M. Dunn placed third and won a bronze medal and a fine trip to the donor's banquet in Chicago in 1929; Kimball L. Backus placed second and won a silver medal and a trip as honor guest to the banquet in 1930. We want a K. S. A. C. man to bring home the gold medal in 1931 and our contestants to bring home the cup.

H. Arlo Stewart, '26, teacher of vocational agriculture in Washburn R. H. S., Topeka, plans to take graduate work in the coming summer school term.

Ray B. Watson, '21, is located at Quincy, Ill., as the district representative of the Sun Life Assurance Company of Canada. His residence address is 308 N. Twenty-fourth St. A note on a card from him indicates his usual pep.

S. A. Watson, '20, is head of the Department of Biology in Whittier College, Whittier, Calif. While at Wilmington College (Ohio) Mr. Watson found time to complete the work for his doctor's degree which he has received from Ohio State University. This is his third year at Whittier College. A Federal Entomological Laboratory is located on the Whittier campus and the cooperation between the two institutions is helpful.

COLLEGE NOTES

GRAIN TEAM REFUSES TO GO DOWN

The precedent set by the K. S. A. C. football boys at Lincoln Thanksgiving evidently furnished the required stimulus for the grain grading and judging boys at Chicago, for they came to the front with a brilliant win against hard competition.

The team competed in two intercollegiate contests this year. The first one was in Kansas City, November 17, and was held in connection with the American Royal Live Stock Show. The second contest, at Chicago, was November 29 at the International Grain and Hay Show, which was held in connection with the International Live Stock Exposition. The members of the team were:

William J. Braun .....Council Grove
Leland M. Sloan .....Leavenworth
Alva M. Schlehuber .....Durham
(at Chicago only)
Chester A. Wismer .....Pomona
(alt. at Chicago)
Fulton G. Ackerman .....Lincoln
(alt. at Kansas City only)

The Aggie team placed third in the Kansas City contest with five teams competing. Leland M. Sloan was fourth high individual. In the Chicago contest the Aggie team won by a nice margin. Six teams competed. The four highest scores made were: Kansas, 4,300; Iowa, 4,141; Nebraska, 4,116; and Oklahoma, 4,000. The total points for the two contestants put Kansas well in the front with Iowa State College in second place.

At Chicago the Aggies had the first, second, and sixth high individuals. W. J. Braun was the high man with 1,468 points out of a possible 1,768 points. Braun was high man in both judging and identification and was third in grading. Leland M. Sloan was second high individual with 1,452 points and ranked second in grading, third in judging, and fourth in identification. Alva M. Schlehuber placed sixth.

In the way of prizes the boys all wore bronze medals home from Kansas City, while from Chicago they carried home the cup, which North Carolina won at the previous Chicago contest. A $250 scholarship for K. S. A. C. was also won by the Kansas team. W. J. Braun received a beautiful large plaque in honor of winning the distinction of being high individual in the contest. (See team picture.)

The team was coached by Prof. J. W. Zahnley of the Department of Agronomy. Professor Zahnley has enjoyed unusual success as a coach while at K. S. A. C. In the seven years a team has been coached by him they have placed first three times, and have never fallen below third place. Two teams coached by Professor Zahnley have been proud to have the high individual of the contest.

—L. M. S., '31.

DAIRY CATTLE JUDGING TEAM

The Kansas State Agricultural College 1930 Dairy Cattle Judging team competed in two intercollegiate contests, one at the Waterloo Dairy Cattle Congress and the other at the National Dairy Show in St. Louis. The team was composed of—

Kermit V. Engle.....Abilene
Harold B. Harper.....Fort Scott
Richard A. Dodge.....Manhattan
(alt. at Waterloo)
Laurence A. Peck.....Soldier
(Alt. at St. Louis)

Prof. W. H. Riddell of the Department of Dairy Husbandry was their coach.

At Waterloo the team placed ninth with 10 teams competing. In individual ranking Engle tied for first place in judging Guernseys and Harper placed fifth in the Ayrshire judging. The team placed twentieth with 25 teams competing at St. Louis, where colleges from all over the United States and Canada were represented. The team placed second in Jerseys, Engle placing fifth and Dodge eleventh in that breed.

The boys were unable to bring home a trophy, but both the team and the coach deserve credit for doing their best in two close and hard-fought contests. —W. W. B., '32.

MEN'S MEATS JUDGING TEAM

The Men's Meats Judging Team represented the college in two contests this fall, one at the American Royal Live Stock Show at Kansas City, the other at the International Live Stock Exposition at Chicago. The members of the team were:

B. R. Taylor.....Alma
G. S. Brookover.....Eureka
W. G. Nicholson.....Eureka
R. M. Wilson (alt.).....Iola

Prof. D. L. Mackintosh of the Department of Animal Husbandry was the coach.

The team placed second at Kansas City with five teams competing. It lost to Iowa by a one-point margin. The Kansas team placed first in beef and lamb and third in pork. In the total individual scores Nicholson placed fourth and Brookover and Taylor tied for fifth. Brookover was high individual in beef and Nicholson high in pork.

Kansas placed sixth at Chicago with nine teams competing. Nicholson was high individual in lamb and ranked tenth in the total individual scores. —W. G. N., '31.

DAIRY PRODUCTS TEAM WINS

The National Champion Dairy Products Judging Team was the title won by the team which represented the Kansas State Agricultural College in the intercollegiate contest held in connection with the Dairy Industries Exposition at Cleveland, Ohio, October 18 to 25, 1930. The Kansas team won the sweepstakes cup for first place in the judging of all products, also a silver trophy for the first place in cheese judging. It placed second on judging butter and sixth on milk. Sixteen teams, representing colleges and universities in the United States and one in Canada, competed in the contest. The Kansas team was composed of—

Ralph F. Germann.....Fairview
Walter W. Babbit.....Willis
John L. Wilson.....Geneva
William J. Braun (alt.).....Council Grove

Prof. W. H. Martin of the Department of Dairy Husbandry coached the team.

Germann was fourth high individual, thereby winning one of the $750 scholarships awarded to each of the first six men by the Dairy and Ice Cream Machinery and Supplies Association. Germann also won two gold medals for placing first on cheese, and was seventh on milk and ninth on butter. Wilson ranked fourteenth in the entire contest. Babbit placed fourth on judging cheese, ninth on butter, and was eighteenth individual in all products.

Aside from the contest the trip of over one thousand miles was well worth the effort according to all members of the team. The 30-hour ride by rail in a Pullman, seeing the city of Chicago, and visiting the largest show of its kind ever held were events the members will long remember.

Professor Martin, head of the dairy manufacturing work in K. S. A. C., gives some idea of the size of the Dairy Industries Exposition by stating that more than 11,000 people each day visited the show. Machinery valued at one million five hundred thousand dollars and covering five acres of floor space was on exhibition by manufacturers from all parts of the world. —H. B. H., '32.

AGGIE APPLE JUDGERS SCORE A BIG LEAD IN THEIR FINAL CONTEST

The Kansas Apple Judging Team competed in two contests with Missouri this year. The team consisted of E. P. Schrag, Moundridge; W. C. Whitney, St. George; E. L. Wier, Blue Mound; W. A. Meyle, Holton; and C. T. Hall (alternate), New Albany.

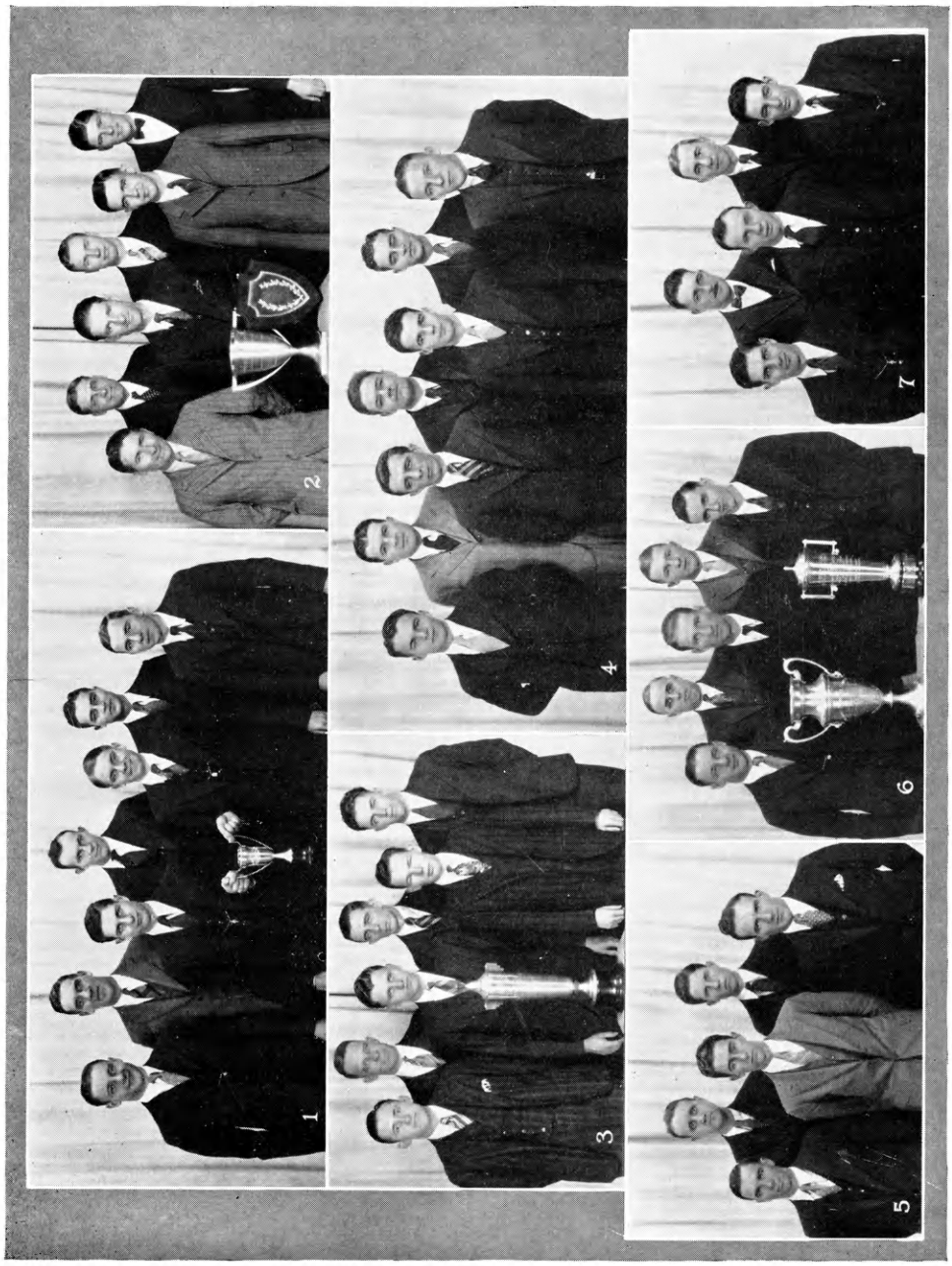
The first contest was held at Shenandoah, Iowa, November 13, 1930, in connection with the Mid-West Horticultural Exposition. The Missouri team won the contest by the margin of 15 points. The teams made scores as follows: Missouri, 8,355; Kansas, 8,340, out of a possible 8,900. E. P. Schrag was high-point man of the contest with a score of 2,195 points out of a possible 2,225.

The second contest was held at Kansas City, Mo., December 12, 1930, under the auspices of the Missouri Valley Horticultural Conference. The K. S. A. C. team won first by a big margin. Every member of the Aggie team including the alternate made a higher score than the highest man on the Missouri team. The teams scored as follows: Kansas, 8,790; Missouri, 8,475, out of a possible 8,900, the Kansas team scoring 98.76 per cent, an outstanding score. E. L. Wier was high individual of the contest with a score of 2,220 out of a possible 2,225.

These contests consisted of the judging of

15 classes of apples, each class containing three plates and each plate containing five apples. There were also 100 apples in a separate group to be identified, representing 27 varieties, seven of which are not grown in this region.

The team, which was coached by Prof. W. F. Pickett, was awarded a silver loving cup at Kansas City by the Missouri State Horticultural Society. —E. L. W., '31.



K. S. A. C. INTERCOLLEGIATE AGRICULTURAL JUDGING TEAMS, 1930

(1) Live Stock: John L. Wilson, Prof. F. W. Bell (coach), Bruce R. Taylor, William G. Nicholson, Will M. Myers, Ebur S. Schultz, George S. Brookover. (2) Crops: Chester A. Wismer, Prof. J. W. Zahnley (coach), William J. Braun, Alva M. Schlehuber, Leland M. Sloan, Fulton G. Ackerman. (3) Apple: Wilmer A. Meyle, Prof. W. F. Pickett (coach), E. LaVerne Wier, Elmer P. Schrag, Charles T. Hall, Wayne C. Whitney. (4) Poultry: Jay R. Bentley, Prof. H. M. Scott (coach), Elmer P. Schrag, Leroy A. Wilhelm, H. Leonard Stewart, Ebur S. Schultz, Fay A. Mueller. (5) Dairy Cattle: Dick A. Dodge, Prof. W. H. Riddell (coach), Laurence A. Peck, Harold B. Harper, Kermit V. Engle. (6) Dairy Products: John L. Wilson, Prof. W. H. Martin (coach), William J. Braun, Ralph F. Germann, Walter W. Babbit. (7) Meats: Bruce R. Taylor, Prof. D. L. Mackintosh (coach), William G. Nicholson, George S. Brookover, Richard M. Wilson.

THE POULTRY JUDGING TEAM UPHOLDS THE K. S. A. C. RECORD AT THE MID-WEST CONTEST

The 1930 Kansas Aggie poultry judging team competed in two intercollegiate contests: The St. Louis National Poultry Show, St. Louis; and the Mid-West Intercollegiate Poultry Judging Contest, Chicago. It was second to Iowa State College in total scores for the two contests. The team was composed of the following men:

F. A. Mueller .....Sawyer
L. A. Wilhelm .....Arkansas City
(alt. at St. Louis)
J. R. Bentley .....Ford
E. S. Schultz .....Miller
(at St. Louis only)
E. P. Schrag .....Moundridge
(alt. at Chicago only)
H. L. Stewart .....Vermillion
(alt. at Chicago only)

At the Intercollegiate Poultry Judging Contest held in connection with the St. Louis National Poultry Show, the team placed fifth with five teams entered. The team was second in production judging. Bentley was second individual in production judging and fifth high individual in the contest. This is the first year that a team from this college has been entered in the St. Louis contest. It was considered valuable training for the contest at Chicago.

In the Mid-West intercollegiate contest at the Coliseum Poultry Show in Chicago December 6, 1930, the team placed second with 10 teams entered, being outranked by the Iowa State College team. The other competing teams, in the order of total scores, were: Pennsylvania State College, University of Missouri, Oklahoma A. and M. College, University of Nebraska, North Dakota Agricultural College, Michigan State College, University of Illinois, and Ohio State University.

In the Chicago contest Bentley was second high individual and Mueller was sixth. The team placed third in production judging, second in the written examination over the American Standard of Perfection, and fourth in exhibition judging. Bentley was third individual in production judging and seventh in exhibition judging. Wilhelm tied for fifth in the examination and Mueller and Bentley tied for seventh. Cash prizes amounting to $80 were won by the highest 10 individuals in the entire contest. Second place brought $15 to Bentley and Mueller won $5.

This is the third consecutive year that K. S. A. C. poultry judging teams coached by Prof. H. M. Scott have competed at the Mid-West intercollegiate contest. His team placed second in 1928, first in 1929, and second again in 1930. Much of the credit for this excellent record is due to the work of Professor Scott. —J. R. B., '32.

WOMEN'S MEATS JUDGING TEAM LOSES TO NEBRASKA

The women's 1930 meats judging team placed second with two teams competing in the Women's Intercollegiate Meats Judging contest at the American Royal Live Stock

WOMEN'S INTERCOLLEGIATE MEATS JUDGING TEAM, 1930
Left to right: Neva Burt, Prof. D. L. Mackintosh (coach), Violet A. Heer, Esther Toburen, Florence E. James.

Show. The University of Nebraska team placed first. Members of the team were:

Esther Toburen..... Cleburne
Neva Burt..... Greensburg
Florence E. James, New England, N. D.
Violet A. Heer (alt.).....Manhattan

Miss Toburen was high individual contestant and was runner-up in pork judging. Miss Burt tied for first place in judging lamb and placed second in beef judging.

NEW MEMBERS OF ALPHA ZETA

Alpha Zeta is a national honorary agricultural fraternity. It measures and elects its members on the highest standards of scholarship, character, personality, and leadership. A student is qualified for membership after

he has completed three semesters of college work. However, the majority of men elected to Alpha Zeta are juniors or seniors. New members are elected each semester. All students elected to membership the first semester this year are juniors. Those elected are:

Carl E. Elling.....Lawton, Okla.
Luther A. Jacobson.....Horton
Earl H. Regnier.....Spearville
Keith J. Kimball.....Nickerson
Boyd R. Cathcart.....Winchester
Earl H. Johnson.....Norton
Tom D. Dicken.....Winfield
Oliver W. Shoup.....Udall
Claude L. King.....Olsburg

The fall initiation was Thursday, November 6, 1930, at 5 p. m., and the initiation banquet was held that evening at the Wareham Hotel. A large group attended the banquet including all members of the honorary fraternity enrolled in the college the first semester and a good representation of the alumni. Prof. E. B. Wells, specialist in college extension and an Alpha Zeta alumnus, gave an interesting and instructive talk that was enjoyed by all.

ALPHA ZETA AWARDS MEDAL TO HIGH AG FRESHMAN

It is an annual event for Alpha Zeta to award a medal to the freshman enrolled in the Division of Agriculture making the highest scholastic record during his freshman year. John I. Miller of Prescott was awarded this medal for the year, 1929-'30, as he made the highest scholastic record with 98 points to his credit for the year as shown in the individual honor roll printed in the October number of the Ag Student. Other members of the Class of '33 to receive recognition in Agricultural Seminar were: Andrew B. Erhart, Timken, second; and Paul W. Griffith, Edmond, third, in total number of points.

PHI KAPPA PHI FALL ELECTION

Three students in the Division of Agriculture were elected to membership in Phi Kappa Phi in their annual fall election. According to the rules of this honorary society students elected to membership the first semester this year must be in the upper 5 per cent of the class of 1931. The three Ag seniors who received this honor for their high scholastic records were Fulton G. Ackerman, George D. Oberle, and Bruce R. Taylor. As well as being superior students these men have been leaders in the various activities of the Division of Agriculture. George D. Oberle and Fulton G. Ackerman are majoring in the Department of Agronomy and Bruce R. Taylor is majoring in the Department of Animal Husbandry.

WINNERS IN THE STUDENT POULTRY JUDGING CONTEST

Luther A. Jacobson of Horton was awarded first place and a gold medal in the poultry judging contest held November 15, 1930. The contest was sponsored by the K. S. A. C. Poultry Club and a record list of 89 student judges were entered. Prof. H. M. Scott of the Department of Poultry Husbandry was in general charge.

Jacobson's score was 740 out of a possible 800. Second place was won by F. Dean McCammon, Norton; third, by W. R. Smith, Manhattan; fourth, by Earl H. Johnson, Norton; fifth, by Carmy G. Page, Norton; and sixth, by Raymond B. Wagner, Richmond. Silver and bronze medals were awarded to second and third places, respectively. Mr. Johnson was awarded a ten-pound turkey; Mr. Page, a five-pound rooster; and Mr. Wagner, a four-pound hen. —O. I. H., '31.

George E. Taylor, '23, is assistant professor of dairy husbandry, Michigan State College, East Lansing.

Rex A. Maupin, '22, is musical arranger and director of concert orchestra at Radio Station KYW. His home address is 1055, Glenlake Ave., Chicago.

Homer L. Summers, '25, is superintendent of the Newark, N. J., plant of the Reid Ice Cream Corporation. His home address is 425 Central Ave., Orange, N. J.

Orville R. Caldwell, '28, formerly county agricultural agent in Finney county (Garden City), has been farming on rural route 9 out of Emporia the past season.

The Live Stock Judging Team Makes an Excellent Record

Bruce R. Taylor, '30

The K. S. A. C. 1930 collegiate live stock judging team made a very creditable showing, with the keenest of competition in the big shows this fall. It competed in three contests: The Kansas National Live Stock Show at Wichita, the American Royal Live Stock Show at Kansas City, and the International Live Stock Exposition at Chicago. While the team won but one of these contests it placed well up in each, and in the course of the three contests defeated every team on the circuit. Much credit for this record is due Prof. F. W. Bell of the Department of Animal Husbandry, who has regularly produced teams for K. S. A. C. that are never far from, if not at, the top. The team was composed of the following students:

George S. Brookover.....Eureka
Will M. Myers.....Bancroft
(alt. at K. C.)
William G. Nicholson.....Eureka
Ebur S. Schultz.....Miller
(alt. at Wichita and Chicago)
Bruce R. Taylor.....Alma
John L. Wilson.....Geneva

With the exception of William G. Nicholson who replaced Carl Williams (alternate at Denver), who is not in school this semester, this is the same team that won the contest at the National Western Live Stock Show at Denver in January, 1930.

In the Wichita contest, November 13, the team placed first with eight teams competing. Wilson was third high individual, Nicholson fourth, Myers ninth, and Taylor eleventh. The team was first on hogs, second on both sheep and horses, and third on cattle. High men of the team on each class of live stock were: Wilson first on hogs, Nicholson first on horses, and Myers and Wilson tied for first on both cattle and sheep.

In the Kansas City contest, November 15, the team tied with Texas A. and M. College for fifth place, with 14 teams competing. The team was second in hog judging. Taylor tied with a Michigan judge for first individual on hogs. In each class of live stock the individuals on the team ranked as follows: Taylor first on hogs, Nicholson first on sheep, Brookover first on cattle, and Taylor and Schultz tied for first on horses.

At the Chicago contest, November 27, the team placed second with 23 teams competing. Brookover was sixth high individual of the 115 contestants. The team placed third on cattle, third on sheep, fifth on horses, and tenth on hogs. Individual rankings on the team were: Myers first on cattle, Brookover first on sheep, and Taylor first on both hogs and horses.

The scores made by teams competing in all three contests or high teams at both Kansas City and Chicago are shown in the following tabulation:

Team	Chicago	Kansas City	Wichita	Total
Oklahoma	4,183 (1)	4,465 (2)	2,695 (2)	11,343
Iowa	4,079 (4)	4,445 (3)	2,608 (4)	11,132
Kansas	4,099 (2)	4,315 (5)	2,703 (1)	11,117
Ohio	4,031 (6)	4,520 (1)	.....	8,551
Nebraska	4,074 (5)	4,354 (4)	.....	8,428
Purdue	3,978 (7)	4,273 (8)	.....	8,252
Texas Tech.	3,854 (12)	4,278 (7)	2,628 (3)	10,760
Texas A. and M.	3,844 (14)	4,315 (5)	2,526 (6)	10,685
Wyoming	3,845 (13)	4,203 (11)	2,581 (5)	10,629
Arizona	3,717 (21)	4,114 (13)	2,367 (8)	9,898

Considering the results of the Denver contest the Kansas team won two firsts, one second, and one fifth out of four contests, putting them near the top in total score.

The Chicago contest deserves a word of comment in that it is a particularly large, yet smooth-running contest without a fault in management. This is due to its capable manager, J. H. Shepard, president of North Dakato Agricultural College. President Shepard has managed the contest since 1900.

On the trip the live stock judging team visited several of the big live stock farms of the United States, and worked on the high-class animals thereon. The team visited Long View Farms at Lees Summit, Mo.; Sni-A-Bar

(Continued on page 49)

QUESTIONS & ANSWERS

FARM & COLLEGE

Q. Can the first year's work of the Federal Farm Board be considered as successful?

A. The Federal Farm Board in its first year's work has met with greater success than could reasonably be expected of it. The Agricultural Marketing Act creating the Federal Farm Board specifies two specific lines of work designed to improve the agricultural situation. The first is the development of cooperative marketing. The second is the control and elimination of surpluses.

In developing cooperative marketing, the Federal Farm Board has had unusual success. The cooperative effort in many communities has been more than doubled during the past year. The cotton handled cooperatively for the 1930 crop will be at least three times as much as in 1929. The wheat handled cooperatively has probably been doubled. Cooperatives acting under Farm Board influences handled 35 to 40 per cent of the wool and 85 per cent of the mohair of the country in 1930. Significant developments have been made in live-stock marketing, dairy marketing, and in fruit and vegetable marketing. In brief, the Farm Board activities in cooperative marketing attained greater success in 1930 than any reasonable person believed would be possible at the beginning of the year.

The stabilization efforts of the Farm Board have not met with the unqualified success that characterizes its efforts along cooperative marketing lines. However, the Farm Board has steadied markets, particularly for wheat. Due to the efforts of the Farm Board, Kansas wheat prices are now at least 20 cents higher than they would be without the action of the Federal Farm Board.

The efforts of the Farm Board to reduce production have met with varied success. In some sections acreage has been reduced. In others, there has been no apparent influence as a result of the agitation for reduced production.

The program of work mapped out for the Federal Farm Board is a long-time one. Its greatest influence should be felt a number of years from now. Consequently, people should not expect too much of the Board in the first few years of its activities. When these factors are taken into account, one is convinced that the first year's work of the Federal Farm Board has met with unusual success. —W. E. Grimes, Professor of Agricultural Economics.

Q. Is cattle production more risky than other agricultural activities?

A. It may or may not be more risky. Cattle production lends itself more readily to speculation than most other agricultural activities and many cattlemen, especially cattle feeders, are willing to take a chance on speculative rather than rational methods. Occasionally large profits are made by following the speculative method but over a term of years it is a losing game. On the other hand, cattlemen who are following a practical long-time program based upon major demands and the type of the farms or ranches they own, are finding cattle production less risky and more profitable than most other agricultural activities. —C. W. McCampbell, Professor of Animal Husbandry.

Q. How does alfalfa affect the subsoil moisture?

A. Alfalfa is a very deep-rooted crop and under conditions of light rainfall may greatly deplete the deep subsoil of its moisture. Tests have shown that upland at the Kansas Agricultural Experiment Station after growing alfalfa four years contained in the subsoil from 10 to 15 feet deep only half as much total water as soil that had never grown alfalfa. Furthermore old alfalfa land that had been broken out of alfalfa for 12 years and grown to corn and wheat, had not regained its deep subsoil moisture. Alfalfa reseeded

on this same land will have less subsoil moisture for its growth than alfalfa on land for the first time. —F. L. Duley, Professor of Soils.

Q. What fertilizers are practical for alfalfa in Kansas?

A. Where alfalfa is grown on medium to thin soils in the eastern part of Kansas, 150 pounds of superphosphate to the acre usually will give higher yields of hay than untreated land. Cooperative tests with farmers have shown an increase of about 900 pounds of alfalfa per acre due to this treatment. At Manhattan the increase has been only 600 pounds, but on the southeastern Kansas experiment fields the increase has been 1,400 pounds. The superphosphate has been applied broadcast about the time growth starts in the spring. —F. L. D.

Q. Can wheat be used safely as the principal grain in a laying ration?

A. This question was answered in the affirmative on page 16 of the October, 1930, number of this magazine where it was pointed out that 75 per cent of the laying ration could be composed of wheat. Since that ration was prepared results of an experiment at the Missouri Agricultural Experiment Station have been made available. The results where various proportions of corn and wheat were used over a period of 11 months were as follows:

Ration	Pounds of feed per hen		Eggs per hen	Pounds of feed per doz eggs
	Grain	Mash		
All corn	35.3	23.5	107	6.48
¾ corn; ¼ wheat	33.0	29.0	121	5.75
½ wheat; ½ corn	42.3	23.0	146	5.36
¼ corn; ¾ wheat	47.4	20.2	146	5.56

—L. F. Payne, Professor of Poultry Husbandry.

Q. Would you advise using our own Leghorn cockerels provided we are confident they are superior to others available for trading?

A. By all means use your own males in preference to inferior males from the flocks of others. The danger of inbreeding too closely is very slight in a flock of 200 or more birds. If you desire to introduce new blood I would suggest that you get in touch with one of the reliable Leghorn breeders in Kansas. Most breeders can supply you with unrelated males year after year. In other words, you may have the benefit of their breeding program. —L. F. P.

Q. Why is it market eggs have been so cheap the past few months?

A. A combination of circumstances is largely responsible for the present low price of eggs. The general business depression, the largest storage holdings on record, and an increase in the fresh egg supply has demoralized the market. The industry probably could have survived any one of these conditions, but it has been unable to cope with all three at once. —L. F. P.

Q. We are feeding sweet milk to our flock of chickens. Our neighbor insists that the milk should be sour. What is your opinion?

A. It makes little difference whether the milk is sweet or sour. It is probably best not to feed sweet milk one day and sour the next. During the winter months, it is easiest to feed sweet milk. —L. F. P.

Q. What is the importance of the recent vote on the income tax amendment?

A. The vote on the income tax amendment in November contains elements of encouragement as well as disappointment for those interested in a reformed tax system. Four hundred and ninety-one thousand persons voted on the income tax amendment. This number was 80 per cent of the number voting for governor and it is hardly necessary to add that there was an unusually large vote for the office of governor in the last election. Of those voting on the amendment 46.4 per cent voted for and 53.6 per cent voted against, which indicates that it was far from being an overwhelming defeat. Experience in other states where the income tax is now in force would lead one to believe that the income tax principle fared well in its initial presentation to the voters of Kansas. This tax in a number of other states met several defeats before final adoption. The realization of the need of a broader tax base with an income tax occupying an important position will come to the minds of Kansas people only through an extensive campaign of education on taxation matters. —Harold Howe, Associate Professor of Agricultural Economics.

Q. About what per cent of raw market milk contains the undulant fever germ?

A. This per cent, of course, varies greatly from time to time but no one who has seriously attempted to hunt for this germ in raw market milk has failed to find it.

Q. Then why are there so few cases of undulant fever reported, since a great deal of our milk is marketed raw or consumed raw?

A. The explanation must be that the human race has a high resistance to infection by this germ, or that the majority of these germs have little, if any, disease-producing power.

Q. To safeguard against undulant fever what seems to be the alternative to pasteurizing market milk?

A. It would seem that the only alternative is to keep the producing or dairy herds clean from abortion disease. —C. H. Kitselman, Associate Professor of Pathology.

Q. Does it pay to warm the drinking water for milk cows?

A. It pays to warm water for cows if the water supply is from an unprotected outside tank. A small tank heater that will prevent ice from forming and take the chill out of the water will cause the cows to drink more water. —J. B. Fitch, Professor of Dairy Husbandry.

Q. How often should dairy cows be watered?

A. Experiments at Beltsville, Md., have shown that cows watered twice a day produce more than those watered only once. And cows receiving water at will gave about 5 per cent more milk than cows watered twice a day. All milk cows should have water twice a day in winter and heavy producers more often. —J. B. F.

Q. Is crossbreeding practical for the average poultryman to follow?

A. It is practical for the poultryman who depends upon market poultry and eggs for his sources of income. It will not appeal to anyone who depends upon the sale of breeding stock. Experimental results have shown that first-generation crosses exhibit superior vigor in hatchability of eggs, rate of growth, and disease resistance. These factors reduce the cost of production but it should be kept in mind that crossbreds themselves cannot be used as breeders. This subject is discussed at length in the writer's bulletin on "Crossbred Poultry," now in press. Copies may be obtained by addressing a request to Agricultural Experiment Station, Manhattan, Kan., and asking for their new bulletin No. 252, on "Crossbred Poultry." —D. C. Warren, Professor of Poultry Husbandry.

Q. Is pullorum disease (bacillary white diarrhea) of chickens of economic importance in Kansas?

A. Statistics gathered by the Agricultural Experiment Station over a 10-year period show that an average of 25 per cent of the mature birds of all flocks are "carriers" of this infection. The losses due to lowered fertility and hatchability of the eggs and the greater losses of chicks hatched from flocks carrying 25 per cent infection are conservatively estimated as making chicks at three weeks of age from infected flocks cost 11 cents more per chick than chicks that originate from pullorum disease-free flocks. If the poultry population of Kansas (18,000,000) is replaced every third year, the losses caused by pullorum disease from the factors mentioned would be $450,000 a year. This does not include the less easily estimated but obviously tremendous waste caused by the insidious effect of infection upon the growth, production, and health of the flock. —C. A. Brandly, Assistant Professor of Bacteriology.

Q. Are corn and sorghum smut injurious to live stock?

A. For many years there have been opinions based on observations and a small amount of experimental work that these smuts are poisonous to live stock. Extensive experiments in the Department of Botany and Plant Pathology have shown that horses and cows are not injured by eating large quantities of these smuts. Calves and cows as well as horses were fed large quantities of these smuts, more than they could possibly get under natural conditions, without the least evidence of injury.

A second line of investigation in this re-

search project was to discover whether or not the corn smut spores would remain viable after passing through the alimentary tract of animals. The common opinion has been that manure spreads corn smut. It was found that the smut spores of not only corn smut but also sorghum kernel smut were killed in the stomachs of these animals and were not viable to any appreciable extent in the feces. Most all Kansas land requires all the barnyard manure that can be applied and there should never be any hesitancy in using it because of the spread of smut. —L. E. Melchers, Professor of Plant Pathology.

Q. Was the newly organized Kaw Valley Potato Growers' Association a success as a marketing agency during the 1930 season?

A. Yes. The average price received by association members was as high if not higher than the average of non-association prices and in addition the entire industry in the valley was benefited because of a higher price level maintained through the operation of the association. The association completed the season's operations with a surplus of $7,000 on hand. —E. H. Leker, Extension Specialist in Plant Pathology.

Q. What is the annual extension workers' conference?

A. It is a conference of K. S. A. C. extension workers, all of them members of the college faculty, but many of them located in different parts of the state. The average person does not think of the 80 county agricultural agents, the 31 home demonstration agents, and the six 4-H club agents as members of the college faculty, but they are. They are the people who are carrying educational advantages to citizens of the state who are not able to attend college.

The conference is a time to get these extension workers from out over the state together with the 48 members of the central office force of the Division of College Extension. This force includes agricultural specialists, home economics specialists, 4-H club leaders, home study teachers, and executive officers. This annual getting together gives these extension workers a chance to talk over problems and policies for the future and to make definite plans for the work to be carried on the following year. —Vance M. Rucker, '28, Extension Specialist in Marketing.

Q. Can frozen cream be accurately tested for butter fat?

A. Frozen cream will, of course, show the same per cent of butter fat as normal cream, but the difficulty is in getting a representative sample to test. The cream must first be warmed and in this process there is danger of the butter fat oiling out or floating on top, thus making it difficult to get a good sample. —W. H. Martin, Professor of Dairy Husbandry.

Q. What trees, if any, should be grown for windbreaks in the western half of Kansas?

A. In many locations in any county in western Kansas trees can be grown for windbreaks. A mixture of the following species makes the best windbreaks: Red cedar, western yellow pine, Chinese arbor vitae, hackberry, elm, Russian olive, and cottonwood. One species alone does not make so good a windbreak as the mixture. —W. F. Pickett, Professor of Horticulture.

LIVE STOCK JUDGING TEAM

(Continued from page 45)

Farm at Grain Valley, Mo.; spent two days working on the live stock at Iowa State College; one day at the Holbert Horse Importing Company at Greeley, Iowa; a day at Edellyn Farm, Wilson, Ill.; and two days at the University of Illinois at Champaign. The Edellyn Farm, owned by Mr. Thomas E. Wilson of the Wilson Packing Company, is one of the most outstanding Shorthorn herds in America.

The team thus had the opportunity of visiting many leading live stock farms and working on the various great show animals which represent the best there is in present day live stock. Such work is a real education and an inspiration to any lover of live stock. The personal contacts made were with the biggest men in the live stock industry and the value of it all cannot be readily estimated, nor the experiences easily forgotten.

Northwestern Kansas Stages Seventh National Corn-Husking Contest

Raymond G. Frye, '30

The greatest agricultural athletic event ever staged occurred in the form of the seventh National Corn-Husking Contest held in Norton county on November 14, 1930. This event now ranks with the leading athletic events in the sporting world. Fifteen thousand automobiles and numerous other modes of transportation conveyed 50,000 people to the contest. The importance of this event may be more fully realized by knowing that six moving picture companies had representatives present making both sound and still pictures, and that the contest was broadcast over the National Broadcasting Company's network of more than 50 stations.

This wonderful contest has proclaimed the agricultural importance of northwestern Kansas thoroughly and successfully. This section was apparently favored this year and crop yields have been good. However, they have not been so outstanding as a comparison with other sections of the state might appear to indicate. Crop yields in northwestern Kansas this year are only slightly above the average of the three previous years. This emphasizes the fact that agriculture is a dependable and thriving industry in this section, and that the drouth of 1930 in other sections has simply caused them to realize what northwestern Kansas is doing agriculturally.

Norton county, with about an average crop of three million bushels of corn for the past four years, and the Norton Chamber of Commerce are responsible for obtaining the seventh National Corn-Husking Contest for northwestern Kansas, and also aided materially in bringing the State Corn-Husking Contest to this section of the state. It might be mentioned, too, that the Nebraska State Corn-Husking Contest was held just across the Kansas-Nebraska line from the northwestern Kansas corn belt. About three years ago the Norton Chamber of Commerce conceived the idea of staging a state contest here, and each year has seen greater effort made to accomplish this. With an unfavorable growing season over a large part of Kansas an unusual opportunity presented itself this year which northwestern Kansas and the Norton Chamber of Commerce did not hesitate to take advantage of. The result has been that two big contests were staged in this section, and that northwestern Kansas has successfully demonstrated over the radio, through the press, by pictures, and through the 50,000 spectators present at the national contest, the importance of agriculture here, the hospitality of citizens of this community, and their ability to stage big events in a big way.

Thirteen contestants from the states of Iowa, Illinois, Indiana, Missouri, Minnesota, Nebraska, and Kansas competed for honors with very creditable results. Fred Stanek of Fort Dodge, Iowa, won the National Championship for the fourth time by husking 30.34 bushels of corn in 80 minutes while his nearest competitor, Guy Simms from Nebraska, husked 29.65 bushels. Theodore Balko and Roy Hansen both from Minnesota won the third and fourth places in the contest. Mr. Stanek had won the national contest in 1924, 1926, and 1927.

A large number of floats and agricultural displays tended to picture northwestern Kansas agriculture to visitors from other sections, and twelve bands and other program features entertained the visitors for several hours. Everything considered, the contest was certainly a real success and an event giving worth-while publicity to northwestern Kansas.

E. E. Gottman, '20, is managing a dairy farm near Tonganoxie.

Earl T. Means, '22, editor of Volume I of the Student, is a successful farmer located near Everest, Kan.

William H. Brooks, '20, is assistant county agricultural agent of Stanislaus county, California. His address is 1721 Lee St., Modesto.

The European Corn Borer in America

H. E. Hoch, '31, and L. A. Peck, '31

During the summer of 1917 the European corn borer was first reported and identified within the United States. At that time it was found to be causing severe damage to sweet corn in the vicinity of Boston, Mass., and to be present within an area of at least 100 square miles in that section. In January, 1919, the insect was discovered in the vicinity of Schenectady, N. Y., and in September, 1919, separate infestations were found south of Buffalo, N. Y., and at Girard, Pa.

The exact date and manner in which this pest gained entrance to the United States is not definitely known but circumstantial evidence accumulated since its discovery indicates strongly that broom corn imported from Hungary and Italy in 1909 and 1910 was the carrier.

To date the European corn borer is known to be present in 18 states, including the entire New England district, with the northeastern fourth of Indiana and the agricultural portion of Michigan as the northern limit, and northern Kentucky and the panhandle of West Virginia as the southern limit. The area of most severe infestation is the district surrounding Lake Erie. During the summers of 1925 and 1926 in Essex and Kent counties, Ontario, the commercial loss over an area of 400 square miles was from 60 to 85 per cent with a loss of 100 per cent in some fields.

The European corn borer has been found in nearly 200 species and varieties of plants in the United States. Some of these plants undoubtedly serve primarily as shelter for the borers rather than as food. The economic plants frequently attacked are: Corn, sweet corn, broom corn, sorghums, barley, beans, beets, chrysanthemums, cotton, cowpeas, dahlia, gladiolia, hemp, hops, millet, peppers, potatoes, rhubarb, sunflower, and Swiss chard. Egg clusters of the insect have also been found on dandelion, horseradish, lettuce, oxalis, plantain, and rye.

In the northeastern portion of the United States there are usually two complete generations of the European corn borer, although the life cycle varies in accordance with seasonal and climatic fluctuations. In 1920 only one complete generation and a partial second generation were produced while in 1921 two complete generations and a partial third generation developed. In all of the infested area west of New England only one generation is produced. In the one-generation area the insect passes the winter as a full grown larva or borer within the tunnel made in its host plant during the previous summer or fall. At this time the borer is nearly an inch long, dirty white in color, with a brown head. Each segment or division of the body bears a row of small dark brown spots, while several narrow dark brown or pink lines extend lengthwise of the body. The under side of the body is flesh-colored and devoid of markings. These abdominal markings are characteristic and as such are depended upon by entomologists for identification purposes.

The larva resumes activity in the spring and in June it bores its way to the surface of the host plant where a slight hole is made which is to serve as an exit for the resulting moth. The larvae now spin thin cocoons in the tunnel, pass into the pupa stage, and about the last of June the first moth appears and emergence continues throughout July.

The female moth has a robust body and a wing expanse of a little more than an inch. The general color is quite variable and represents all shades from pale yellow to light brown. The outer thirds of both the fore wing and hind wing are usually crossed by two narrow zigzag lines darker than the rest of the wing. The male moth has a long slender body, is slightly smaller in wing expanse, and is usually much darker than the female moth.

Soon after emergence the moths mate and the females begin to deposit eggs. They fly only at night and the female moths each deposit from 300 to 700 eggs in small clusters on the under side of the leaves of host plants. The eggs are whitish in color and each egg overlaps the adjoining egg in the manner of shingles. In from five to seven days the eggs hatch and the young larvae at first feed on the tender leaves, the tassels, buds, and husks, and the silk of the ear, but within two to

three days they bore their way into the main stem of the plant. The borers also tunnel within the tassel, the shank of the ear, and the midrib of the leaves. As the borers increase in size their burrowing within the stalk, particularly the tassel, frequently makes it break over. Such broken tassels with the extrusion of yellowish white "frass" or borings are characteristic of stalks infested with European corn borer.

Although the borer has quite a variety of natural enemies they do not usually attack the insect in any appreciable numbers and cannot be relied upon at the present time to hold the pest in check. Eighteen different kinds of four-winged wasp-like parasites have been reared from the larvae and pupae of the borer in New England. However, less than 1 per cent of the borers have been destroyed each year by these parasites. A few birds, including blackbirds, woodpeckers, robins, starlings, and pheasants, have been known to feed to a slight extent on the larvae of the borer in New England. However, from present indications birds cannot be expected to cause much reduction in the numbers of the pest.

Since its discovery in 1917 the European corn borer has been combated and experimented with in an effort to control the pest. Each year the United States Department of Plant Quarantine and Control has employed four to five hundred college men in its scouting and quarantine work. These men come from almost every state in the Union and meet at Toledo, Ohio, for one week of training. During this week they are taught the habits, life history, and characteristics of the insect through actual work with it in the fields. Terminating this week of training is a thorough examination which each man must pass before going into active scouting or quarantine work.

The field scouts are sent out in crews of two to four men of which one is the foreman. To the foreman is assigned a truck and other government equipment. Each crew is assigned a township in which they work until infestation is found or the area known to be clean from borers. When borers are found in a township the infested fields are reported and placed under federal supervision. The following year the area is placed under federal quarantine.

The United States Department of Agriculture through the Plant Quarantine and Control Administration places the infested area under a strict quarantine during the stage in which the corn borer larvae may be carried in the green corn.

The present quarantine area includes all of the corn-growing areas in Canada, excepting the western provinces; also 215,000 square miles in the United States, including the southern two-thirds of New England, the northern extremity of New Jersey, all of New York, three-fourths of Pennsylvania, the panhandle of West Virginia, practically all of Ohio, the northeastern third of Indiana, and nearly all of the agricultural portion of Michigan. In the area east of the Connecticut river in Connecticut, Massachusetts, and the states north, and in that territory in Connecticut west of the river adjacent to Long Island Sound the two-brooded form occurs, while in all other sections of the United States and all infested areas in Canada, excepting Nova Scotia and New Brunswick, only the one-brooded form occurs.

One might ask in what sense is the corn movement restricted from the infested area. The quarantine regulations state: "No cornstalks, ears, shelled corn, or other parts or debris of corn or broom-corn plants or sorghums or Sudan grass shall be moved or allowed to be moved interstate from the one-generation regulated area to or through any point outside thereof unless a certificate or a permit shall have been issued therefor." Articles processed or manufactured in accordance with the regulations, "packages of cleaned shelled corn weighing 25 pounds or less" and reshipments of green corn from New York City during May and June are unrestricted. Additional restrictions apply to shipments of corn and many other articles from eastern New England. Regarding corn on cob or ears the regulations further state as follows: "No corn on the cob or ears of corn originating within the one-generation area shall be moved or allowed to be moved interstate from such area to or through any point outside thereof," and no certificate will be

(Continued on page 59)

The "F. T. D."

W. A. Meyle, '31

Displayed in most flower shops and on much of florists' advertising are the three letters, "F. T. D." With these letters one sometimes sees a winged Mercury and the statement, "Flowers by Wire." What does all of this mean?

The three letters F. T. D. mean Florists' Telegraph Delivery. This is an organization of florists of all parts of the world. Most of the members are in the United States and Canada but there are members in nearly every country in the world. As a result of this association one can send flowers to friends and relatives from any member store and be assured that they will be delivered when requested and in good condition.

How is one assured that the flowers or plants that one ordered will be delivered and how can one tell what to send to a relative in San Francisco or England? How, too, can one tell that an order for $10 will not be cut to $5 and how can one be assured that the receiver will not be charged for the flowers?

That is all a part of the Florists' Telegraph Delivery Association. When you go into the local flower store and say that you want to send a bouquet or a plant to some other city, the florist, if he has the F. T. D. sign in the window, will get out the last copy of the F. T. D. News Supplement. This is a three- or four-page sheet that contains a list of all the cities available and tells what flowers and plants were on the market in the last week and what they were worth. That gives one a pretty good idea as to what can be had this week and as to what it is worth. An order may then be placed intelligently.

If the order is to be delivered in a few hours or the next day the florist wires it to a member in the city where the bouquet is to be delivered. With the order goes the purchaser's name and any message that should accompany the flowers. The florist then mails a copy of the order to the headquarters of the association. In this way a check and a double check is kept on the order. Spotters go around from time to time to check up on the delivered orders to be assured that the receiving florist sends out what is directed. The flowers are paid for or charged at the local store.

The receiving florist sends the bill for the flowers to headquarters. A very good clearing house, just as is used by banks to clear money accounts, is maintained by the headquarters of the association. Thus the money paid is sent to headquarters and they remit to the florist by whom the flowers were supplied. This is to assure the man who receives the order that he will be paid even if the firm with whom the order was placed should go out of business. The clearing house is protected by a bond required from each member florist, thus assuring them of collection of all accounts.

The amount of business done in this way in the United States each year runs into the millions of dollars. The fact that there are few, if any, complaints indicates that it is successful and that there is a real demand for such service.

What does the local florist get from such a service? Very little. He does get a commission on each sale that he handles but the commission is so small that it hardly pays for the clerical work and the interest on the bond that he has to post to assure payment on his accounts. Why, then, does he do it? He does it primarily to give flower buyers better service and thus create a bigger demand for his product. In this way by serving you in a time of need he is making a flower buyer of you and as each flower buyer is added to the list it is possible to sell more flowers and thus reduce the cost of flowers to the buyer. This might be run into an endless chain of service and rewards, each step reacting in favor of the buyer and never harming the merchant in the least.

A. W. Foster, '20, is salesman for E. I. Du Pont de Nemours and Co., with headquarters in Spokane, Wash.

P. E. Neale, '20, is a member of the staff of the Department of Animal Husbandry, New Mexico State College of Agriculture and Mechanic Arts, State College, N. Mex.

The First Season's Work of the Kaw Valley Potato Growers' Association[1]

Lot F. Taylor, '31

The Kaw Valley Potato Growers' Association became a corporation under the laws of the state of Kansas, May 2, 1930. It has handled 1,680 cars of potatoes and as many as 80 cars per day. The members have received all of the proceeds from the sale of potatoes except 3 cents per hundred which was kept by the association for expenses and to build a reserve fund. The association now has about $7,700 in the bank. Most of this will eventually be paid back to the growers. The total value of the potatoes handled by the association this year was $500,000 and the 1,680 cars were 44 per cent of the total car-lot shipments of the territory.

A trade journal in Topeka recently published an article headed, "Can the Grower Stand the Gaff?" This article commented rather favorably on the cooperative marketing idea in general and spoke specifically of the Kaw Valley Potato Growers' Association. It, however, seemed to forget that the dealer was in the business for profit, and took the attitude that one of the dealer's biggest functions was to stand losses—which was a correct statement this year—though they are in the business because in the past they have made money. The Kaw Valley Potato Growers' Association is in business not to make money but to market the potato crop to the consumer and to give the producer the full value of his crop less actual cost of movement. Farmers can and will market their own products. Chain-store buying and independent-merchant alliances have revolutionized merchandizing methods in the last 15 years. Many of the old agencies, traveling salesmen, for instance, have been reduced in numbers. Farmers likewise can do away with a number of dealers and jobbers.

In June this year, sacks were selling for $90 per thousand. The association, by placing an order for 180,000 sacks, bought them for its members for $81 per thousand or a saving of nearly 1 cent per sack. By placing a five-year contract, northern seed growers would grow seed for the association at a correspondingly large saving. Cooperatives have a lower per cent of failures than do private enterprises. Failures in both fields can usually be attributed to the same thing—lack of competent management.

One of the things which the future has in store is the merging of many local organizations, such as the Kaw Valley Potato Growers' Association, into first, a regional, and finally, a national organization. The advantages of a national exchange would be many. Exchange of information; co-ordination of effort to accomplish certain things; national advertising; prevention of overlapping of shipment; and restriction of acreage are a few of the things that would be possible. The Federal Farm Board contemplates assisting in the formation of such an organization.

Midsummer potatoes are a perishable commodity and are easily affected by extreme temperatures. The association was organized to give its members service. It recommended when digging ought to be stopped on account of market or weather conditions. This was simply a recommendation. However, the cooperation of both the members and the nonmembers was splendid. However, some potatoes were dug and shipped under weather conditions that were disastrous to the quality of the potatoes. The association marketed the potatoes and, of course, reductions had to be made which resulted in a lower pool price. This accounts for the fact that the pool price on certain days was lower than the cash track price for the same days.

The association bought some cars on the track on the assumption that they would carry through and sell at a profit for the association. Due to the heat damage the entire cash track business for the season (those cars bought by the association from nonmembers) shows a small loss. This loss prob-

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1. This article consists mainly of excerpts from the address of C. V. Cochran, president of the Kaw Valley Potato Growers' Association, at the annual K. S. A. C. Extension Workers' Conference.

ALUMNI NOTES

DIRECTORY, CLASS OF 1930, DIVISION OF AGRICULTURE

FARMING

Name	Address	Further Information
Harrison F. Axtell	Dimmitt, Tex.	General Farming
David A. Carlson	R. 5, Manhattan	General Farming
W. Welch Coffman	Overbrook	General Farming
M. Lester Cox	Portage, Wis.	Shepherd, R. E. Richards ranch
Lemuel J. Cunningham	Fairview, Okla.	Dairy Farming
John W. Decker	R. 5, Holton	General Farming
Robert H. Dodge	R. 8, Manhattan	General Farming
Clarence M. Dunn	R. 2, Oskaloosa	General Farming
Neil Durham	Randall	General Farming
C. Clifford Eustace	Wakefield	General Farming
Thomas H. Gile	Scandia	General Farming
Edwin O. Habiger	Bushton	General Farming
Ray M. Hoss	Potwin	General Farming
W. Harris Houston	Potwin	General Farming
Milford J. Kindig	Olathe	General Farming
Eugene M. Leary	R. 2, Lawrence	General Farming
C. Porter McKinnie	Glen Elder	General Farming
Merle L. Magaw	Ames	General Farming
R. Bruce Mather	Burdett	General Farming
Paul A. Mears	R. 3, Beloit	General Farming
Warren D. Moore	Bx. 9, R. 1, Copeland	General Farming
William M. Newman	Centralia	General Farming
Clarence E. Nutter	Falls City, Nebr.	General Farming
Harry A. Paulsen	Stafford	General Farming
Ralph F. Pettit	R. 3, Bx. 178, Parsons	Manager of Sun Farms
S. Roger Stewart	Vermillion	General Farming
Charles C. Todd	Auburn	General Farming

HIGHER EDUCATION OR RESEARCH

John J. Curtis	Akron, Colo.	Junior agronomist, U. S. Dept. of Agr.
Kenneth M. Gapen	Madison, Wis.	Graduate student in agricultural journalism, University of Wisconsin
Orville E. Hays	Manhattan	Graduate student, Dept. of Agronomy, K. S. A. C.
Thomas N. Meroney	Manhattan	Graduate student, Dept. of Animal Husbandry, K. S. A. C.
Francis J. Raleigh	Cold Spring Harbor, Long Island, N. Y.	Graduate student, Carnegie Institution of Washington
Louis P. Reitz	Bozeman, Mont.	Instructor, Dept. of Agronomy, Montana State College
Miner R. Salmon	Cold Spring Harbor, Long Island, N. Y.	Graduate student, Carnegie Institution of Washington
James E. Smith	Woodward, Okla.	Agronomist, U. S. Field Station

AGRICULTURAL EXTENSION WORKERS

Laurence L. Compton	Eldorado	Co. Agr. Agt., Butler Co.
Glenn C. Isaac	Paola	Co. Agt. Agt., Miami Co.
Raymond W. O'Hara	Lincoln	Co. Agr. Agt., Lincoln Co.
Dale A. Scheel	Concordia	Co. Agr. Agt., Cloud Co.
J. Edward Taylor	Ulysses	Co. Agr. Agt., Grant Co.
Merrill M. Taylor	Washington	Asst. Co. Agr. Agt., Washington Co.
J. Allen Terrell	Rm. 9, Marble Bldg., Fort Scott	Co. Club Agt., Bourbon Co.

TEACHING VOCATIONAL AGRICULTURE

Howard R. Bradley	Harveyville	H. R. H. S.
Paul R. Chilen	Solomon	S. H. S.
Francis S. Coyle	Byers	B. R. H. S.
Raymond G. Frye	Norton	N. Com. H. S.
Joseph H. Greene	Woodston	W. R. H. S.
Charles Mantz	Spearville	S. R. H. S.
Galen S. Quantic	Mankato	M. H. S.
Fredrick H. Schultis	Alton	A. R. H. S.
Edgar A. Templeton	Wakeeney	W. H. S.
Clemens H. Young	Beverly	B. R. H. S.

OTHER HIGH SCHOOL TEACHERS

Leonard M. Pike	Milford	Science and athletics, M. R. H. S.

COMMERCIAL WORK

Robert F. Brannan	Atchison	Feed salesman, Blair Mills
Harold S. Crawford	Ottawa	Landscape Architect, Willis Nursery Co.
George J. Cunningham	Manhattan	Employee, Wareham Hotel
Theodore G. Harris	Las Cruces, N. Mex.	Employ of Las Cruces Electric Hatchery
Oliver G. Lear	Salina	Salesman, Wear-ever Aluminum Co.
Ray M. Mannen	213 W. Fifth, Hutchinson	Creamery operator, Koloka Dairy
Arnold A. Mast	Windsor, Colo.	Field man, Great Western Sugar Co.
Merle B. Miller	200½ Center, Marysville	Employ of Armour and Co.
Walter P. Powers	St. Louis, Mo.	Feed salesman, Purina Mills Co.
Roy H. Trompeter	c/o Wm. Kiefer, N. Topeka	Tree surgeon
Henry B. Walter	2620 E. Central, Wichita	Draftsman

MISCELLANEOUS

Henry A. Burt	Manhattan	Not permanently located
Alfred H. Epperson	Manhattan	Not permanently located
Kenneth M. Hall	Manhattan	Not permanently located
E. Lynn Watson	Washington, D. C.	2d Lieut., Vet. Corps, U. S. Army Training School

Ducks Kept for Egg Production

D. C. Warren
Professor of Poultry Husbandry

The cackle of the hen has sufficiently advertised her performance that few people are aware of the fact that she has any competition as an egg producer. Certainly very few would select the unpretentious duck as the holder of the world's egg record. Yet the record of 365 eggs in 365 days was made by an Australian duck while the highest official hen's record is 352 eggs in the same period of time. The duck egg is not a popular article of food in America and for that reason the egg-producing breeds are not widely known here. The meat breeds are much more generally kept and these are not very good egg producers. In southern United States there are a few commercial duck farms operated primarily for the production of eggs and, although the demand seems to be increasing, the market for the duck egg is still a very limited one.

While traveling in Holland the writer had an opportunity this summer to visit a large breeding farm where ducks were kept primarily for egg production. On this Dutch farm were found 18,000 layers. The farm was located in northwestern Holland near the village of Tonsel and was said to be the largest farm of its kind in Holland.

Several hundred ducks were being trapnested and since the duck usually lays at night or early morning it is necessary to have a trapnest for each bird being tested. In trapnesting the hen one nest suffices for several birds since the operator makes a number of visits during the day for releasing the birds as they lay.

In Holland the most popular egg-producing breed is the Khaki-Campbell duck. The White Indian Runner is another popular breed in that country. Both breeds were found on the farm visited but the former was kept in much larger numbers. The record on this farm was 361 eggs in 365 days and was made by a Khaki-Campbell duck. The highest-producing White Indian Runner laid 342 eggs in a year.

The owner of this farm, A. Jansen, was much more progressive than the average European poultryman. He had much modern labor-saving equipment. The ducks were kept in long houses divided into numerous compartments, each compartment having a separate outside runway. The farm included about 24 acres and made a most interesting sight as one looked down the long row of pens, white ducks bounding the driveway on one side and brown ones on the other.

Running across the end of the yard was a concrete trough which carried the drinking water needed by the birds. Water was sup-

Few Fields Offer a Greater Opportunity

THE business of farming is not what it used to be. Time was when a farmer could go on year after year without making much money on his crops and still retire, a well-to-do man, on the increased value of his land.

Nowadays the money is made on crops and produce, or it isn't made at all. This means different farming methods, cutting production costs to the bone, doing farm work when and as it should be done, taking less time to each job—in short, power farming.

It also means using more efficient machinery and equipment, which has to be sold, even to farmers who know they must come to it. This kind of selling requires technical knowledge and training on the part of the dealer—college training, or its equivalent in natural ability.

Because of these conditions, there are few fields of present activity that offer greater opportunities to college trained men than the retailing of modern farm equipment and machinery. You have just the training and ability needed. The new business in sight and the replacement business will keep you busy from the start. And, best of all, the work is constructive. Your customers profit as well as you.

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plied by a central system and piped to the troughs so that the turning of a few taps cared for this item of labor. Running between the long rows of pens was a steel track which supported a push car by which the feed was distributed over the plant. The brooding and incubating equipment was also very modern and the methods followed were very similar to those followed in the case of the chicken.

It was most interesting to observe their method of packing the eggs for shipment. Many of the eggs from this farm were disposed of in Germany as well as in Holland. American standard egg cases were not here used but the eggs were packed in two layers, with shavings between, in heavy flat crates. No packing was placed between the individual eggs in a layer. The method is used very generally for hens' eggs in Europe and even in long distance shipments the breakage is very slight.

One handicap of the duck when placed in competition with the hen is the fact that it consumes more feed than the hen. Results of experiments conducted in England show that while the average hen consumed about 4 ounces of feed per day, the duck consumes 7 ounces. Although the duck's egg averages considerably larger than the hen's egg, the problem of the duck farmer is to secure a sufficient premium on his eggs to take care of the extra feed consumption.

THE POTATO GROWERS' ASSOCIATION

(Continued from page 54)

ably will be retrieved on freight claims which have been filed with the railroad companies due to their delays and negligence. The primary interest of the association is to get every cent that the market will afford. Had the outside buyers known that the association could not buy independent potatoes they would have bought them at a lower price than they did. By buying these outside potatoes the association furnished formidable competition and without a doubt strengthened the market.

The price of potatoes this year compared favorably with that of wheat, beef cattle, and other farm products. Both the high temperature during the digging season and the general business and economic conditions of the country contributed to make a low market.

Buying independent potatoes not only furnished competition but prevented a surplus from accumulating. A surplus always results in lower prices and low prices have a tendency to further speculation. Speculation is never good for any market and the more nearly a market can be kept on an actual sale basis the better the market. Consignment of cars is another practice that is detrimental to a good market. When a number of cars are sent to a big market that is already crowded, with instructions to a broker to sell for what they will bring, it can result in only one thing, lower prices. The remedy is: Cut down production, stop digging, reduce the surplus, and keep away from the big markets.

Organized business, organized for the purpose of making a profit in the handling of the farmer's products, is not giving up to farmer-controlled cooperative marketing organizations without a fight. It appeared that certain influential growers outside of the as-

sociation were selected by the outside buyers with the intention of paying them more than the market in order to put the association in a bad light.

The association feels that it has raised the price level and that all growers received more for their crop this year because of the association. The association also believes that only by organization can labor be used to the best advantage. At present many potato growers are watching their neighbors devote their time and energy to getting the association started and will, then, after it is started, demand the benefits of the organization.

THE EUROPEAN CORN BORER

(Continued from page 52)

issued authorizing such movement.

Quarantine stations were situated along the main highways and particularly on highways crossing rivers. In all cases the stations were located just outside of the infested area on main highways leading into the noninfested areas.

As cars approached one of these stations the driver could not help but be aware of the fact that he was going to be stopped, and his car or other vehicle was going to be searched for the articles already mentioned. Several hundred yards from the point where his vehicle was to be searched, were warning signs such as "Keep to the right," "Stop, Look, and Listen." At night the highway was lighted up with bombshells and bright carbide lamps illuminated the warning signs.

If in searching the car green corn was found the corn was confiscated. A detailed report was filled out with such information as, name of owner, address, kind of car and license, where corn was purchased, destination or where corn was to be taken, and various other information. The inspector finding the corn examined it for corn borer larvae, and if any were found they were put in containers and sent in to the entomologist in charge at Toledo, Ohio. All of the corn confiscated was destroyed by burning. In most cases the quarantine lines were operated 24 hours a day. Each crew of inspectors worked an eight-hour shift, rain or shine.

Information and printed matter was handed out to the public explaining the purpose and

nature of the work. Almost 100 per cent of the people stopped and were willing to have their cars searched. However, there were a few cases in which they refused and as a result violation reports were turned in, thus relieving the inspector of further worry.

Orders required all traffic to be stopped excepting doctors, who had a sign that was easily recognized by all inspectors, and funeral processions.

In addition to the above quarantine program there was also part inspection at various parts throughout the infested area. Rivers were scouted by a group of scouts.

A surprising number of cars were stopped during the summer of 1930. Over 16,000,000 cars were stopped and searched, over 300,000 ears intercepted and examined, and 1,100 corn borers intercepted. This shows to a certain extent the vastness of the quarantine program.

To control the European corn borer the following practices have been recommended by the United States Department of Agriculture:

1. Burn, or otherwise destroy, before May 1 of each year, all corn stalks, corn stubble, vegetable, field, and flower crop remnants, weeds, and large-stemmed grasses of the previous year. Remove all remnants of leaves from rhubarb stems before marketing.
2. Keep cultivated fields, fence rows, field borders, roadsides, etc., free from large weeds or large-stemmed grasses.
3. Cut corn close to the ground and remove the fodder from the field as soon as the ears are harvested. Feed direct to live stock, place in silo, or destroy by burning.
4. Plow under thoroughly in the fall all infested cornstalks, corn stubble, other crop remnants, weeds, and similar material when it is impractical to destroy in any other manner. When necessary to adopt this practice, an attempt should be made to plow under all of the material to a depth of at least 6 inches.
5. Plant small areas of early sweet corn to act as a trap crop adjacent to the fields intended for field corn or late sweet corn. Feed or otherwise destroy this early sweet corn as soon as the ears are harvested because such plantings when not destroyed at the proper time constitute a menace to later corn.
6. Limit the size of corn fields to areas that can be kept free from weeds.
7. Do not transplant outside of the infested area any plant or plant products known to be host plants of the borer.
8. Do not transport alive, in any of its stages, specimens of the European corn borer outside of the infested areas.
9. Do not circumvent the quarantine regulations. The penalty is severe.
10. Do not feel angry if products are confiscated at state or international border lines for violation of quarantine regulations. Such action is the most lenient that may be taken under the law.

In spite of all control measures the European corn borer infestation normally spreads 15 to 20 miles each year. However, the intensity of infestation is being reduced each year in the New England territory. Scouting work during the summer of 1930 showed practically no spread of the borer from centers of infestations. This was probably due to the drought and cannot be expected to occur under normal weather conditions.

Apparently it is only a question of time before the European corn borer will become a pest in the corn belt. In the report of the Joint Committee on the European Corn Borer which met at Toledo, Ohio, September 23, 1930, is the following statement: "It is still the opinion of the joint committee that the corn borer unless it is controlled will become one of the most destructive crop pests ever introduced into America. The situation, presenting as it does the possibility of enormous agricultural losses, calls for the continued cooperation of the farmer, the scientist, the educator, and all state and federal administrative officials."

The European corn borer is menacing the greatest wealth-producing crop of America and the potential seriousness of this insect as a destructive agency cannot be overlooked.

Glenn D. Stockwell, '23, is a Riley county farmer. His address is Leonardville.

C. C. Anderson, '21, is district 4-H Club leader in the University of Idaho. His residence address is Boise, Idaho.

Chester E. Graves, '21, is plant pathologist in the employ of E. I. du Pont de Nemours and Co., Wilmington, Del.

A. M. Carkuff, '25, is assistant statistician for Kansas. His address is Topeka, c/o Bureau of Agricultural Economics, U. S. D. A.

J. Wheeler Barger, '22, is rural sociologist in the Agricultural Experiment Station of Texas. His address is College Station, Tex.

Leonard R. Allott, '23, is a chemist in the by-products coke plant of the Colorado Fuel and Iron Company. His address is 531 Veta, Pueblo.

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The Development of 4-H Club Dairy Calf Project in Kansas

K. V. Engle, '31

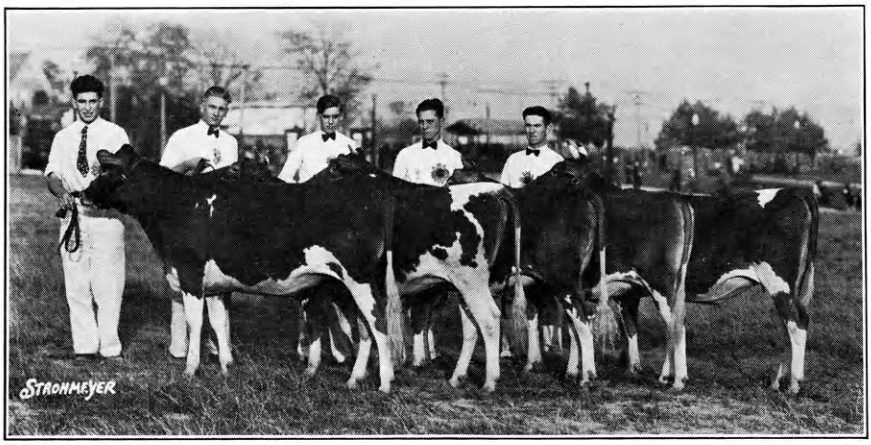
That 4-H Club dairy calf projects are developing rapidly in Kansas is a fact that can be substantiated by a brief summary of the accomplishments of these projects during the last five years. The 1930 Kansas 4-H Club representation at the National Dairy Show at St. Louis performed as follows: Won more prize money than any other state; were awarded one-fourth of the blue ribbons; and won one championship, five first, four second, two third, one fourth, one fifth, two seventh, eight eighth, one ninth, and two tenth prizes. The state Guernsey group won first honors, Ayrshire and Brown Swiss placed second, Holstein, fourth, and Jersey, eighth as groups.

Kansas was represented at the National Dairy Show by 29 calves which had shown the most promise at the several fairs in the state. These calves represented the project work of 1,077 boys and girls in the state who are now engaged in dairy calf projects. This is the second year Kansas has been represented at the National Dairy Show. The success it had there has been quite gratifying to Kansas club workers, because with the exception of the Guernsey calves, all were products of Kansas breeding.

The success of these clubs in the state can be credited to several different factors. The work of the state club leader, county agricultural agents, and state dairy extension workers and the financial assistance, as well as the work, of private individuals, chambers of commerce, and creamery companies are the factors primarily responsible. The work has developed rapidly since 1926. The following comparison of the 1926 to 1930 statistics illustrates the growth that has been made:

Year	Membership	Number of animals	Value	Cost	Profit
1926	365	310	$28,210	$21,916	$12,512
1927	476	337	39,808	26,777	13,030
1928	594	494	36,505	20,586	15,918
1929	768	802	61,515	41,321	20,194
1930	1,077	882	83,044	60,587	22,457

These clubs are under the direct supervision of the state club leader, who works in cooperation with the local county agricultural agents in organizing dairy calf projects. There were 62 counties in Kansas



Courtesy Guernsey Breeders' Journal

THE KANSAS 4-H GUERNSEY GROUP THAT WON FIRST HONORS AT THE NATIONAL DAIRY SHOW, ST. LOUIS, 1930

This group is headed by Lester Zerbe's heifer which won first honors in the yearling class.

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with active dairy calf projects during 1930. In 1926 the dairy extension specialists began to assist in the instruction and training of the state champion 4-H dairy judging and demonstration teams in preparing them for the national contests. In addition, demonstrations in fitting and showing are now being given throughout the state. Eleven such demonstrations were given during 1930 by the extension dairymen. These specialists are also in charge of the 4-H club dairy calves at the national dairy shows, where the boys and girls are making good records as showmen.

In 1924 the Hutchinson Chamber of Commerce sponsored a calf club movement which included dairy and beef calf projects. Success in calf club work in Reno county can be largely credited to this source. The Washington County Cooperative Creamery was one of the first such concerns to become active in assisting with financial aid. In 1926 this company in cooperation with their local farm bureau arranged for the purchase and financing of calves for a county-wide calf club. Seventy-four registered calves of the four major dairy breeds were purchased and distributed to boys and girls of the county.

A more recent development which has been a great aid to calf club work in central Kansas is the Jo-Mar Calf Club Corporation of Saline county. This is a company organized by prominent business men of Salina, which furnishes calves to boys and girls in the county who give evidence of being capable to take the responsibility of caring for the calves as instructed by their county agricultural agent. The boys and girls sign contracts agreeing to care for the calves as instructed and to return to the corporation the first calf from their heifer at a certain predetermined age. All of the heifers are bred to sires belonging to the corporation and which are placed at convenient places throughout the county.

To date, or during the two years the corporation has been operating, nearly 200 registered Guernsey calves have been placed with boys and girls. The calves are being imported from Wisconsin and Minnesota, but the present plan is to have the organization work perpetually when the present group of members begin returning calves in the fulfillment of their contracts.

The results of this experiment to date have been quite gratifying to the men who are interested in it. The calves are being given the proper feed and care. They are making normal growth and a few are developing into high-class show individuals as evidenced by the success this group had in the show ring this past season.

Local, state, and national breed associations, by offering prizes at county and state fairs have given valuable assistance in promoting successful calf-club shows throughout the state. The Ayrshire Breeders Association offers $3 for each calf of their breed which is exhibited at any show provided at least three calves are shown. Kansas Holstein breeders are offering valuable prizes for the champion calves at various fairs. In addition most fair managements are giving more attention to the 4-H calf club departments than formerly. Approximately $4,000 in cash prizes are being awarded yearly in Kansas at local and state fairs to entries of 4-H club dairy calves.

While much time and money are being spent for this work, the state club leaders and other men interested in the future of the dairy industry, are convinced that the investment will yield high rates of interest when expressed in the prosperity of the Kansas dairy industry of the future.

Raymond Campbell, '20, is a dairy farmer on route 2, Parsons.

H. D. Finch, '23, is teaching vocational agriculture in Fruita, Colo.

E. A. Herr, '21, is a successful breeder of Holstein cattle. His address is Wakefield, Kan.

H. L. Baker, '22, is principal of the Liberty Memorial High School, Lawrence, Kan.

Fred F. Young, '20, is manager of the Federal penitentiary dairy herd at Leavenworth, Kan.

James W. Crumbaker, '16, former superintendent of Purdue University experimental hog farms, is now farming at Romney, Ind.