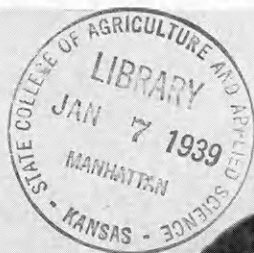


# THE KANSAS AGRICULTURAL STUDENT

MANHATTAN, KANSAS

DECEMBER, 1938



# A Day Then



Held to the furrow by human hands, pulled by plodding oxen, plows that prevailed a century ago turned only an acre . . . perhaps a little more . . . with dreary toil from dawn to dusk. Men still living tell of those tiring days, and in the telling show how young is the age of machinery in agriculture. Yet with all their skill and toil, those men could not cover trash so clean nor crumble soil so well as a mere boy may do today. \*\*\* No longer needed for growing food and fibre, two-thirds of our former farmers now supply the entire population with automobiles, airplanes, air-conditioned homes, education, entertainment, health service, science and invention.

# An Hour Now



## WORLD'S MOST MODERN TRACTOR PLOW



Only a hundred years from the first Grand Detour steel plow, that scoured in sticky soil and thus solved the problem of the prairies, is its direct descendant, the Case Centennial Tractor Plow. Powered by a Case tractor, it turns in a single hour as much . . . usually more . . . than did its progenitor or any prior one-man plowing outfit in a sun-to-sun day. \* \* \* Besides multiplying man-power ten-fold, it "makes tractors bigger" by saving for faster work the power formerly wasted in landside friction. \* \* \* By enabling them to do more with their days, Case helps men to do more with their lives. As you prepare today for richer tomorrows, we invite you to keep acquainted with Case. J. I. CASE COMPANY • RACINE, WISCONSIN

IT COSTS LESS TO FARM WITH CASE

# The Kansas Agricultural Student

VOL. XVIII

Manhattan, Kansas, December, 1938

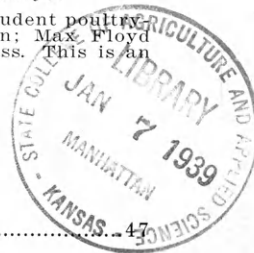
No. 2



Top row, left to right—Theo. Levin, Harold Fox, Maynard Abrahams, Floyd Bacon, Paul Sanford, and William Lytle.

Bottom row—Charles Sanford, Aaron Schmidt, David Long, Wade Brant, Max Floyd.

The above students are high-ranking individuals among 48 participants in the student poultry judging contest held November 5. Charles Sanford was high in the senior division; Max Floyd high in the junior division; and Wade Brant was high in the advanced judging class. This is an annual event sponsored by the Poultry Club.



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# INTERNATIONAL LIVESTOCK EXPOSITION



A record, seldom equalled, was set at the International Livestock Exposition, Chicago, Ill., Saturday, November 26, 1938. On that memorable date, Kansas State College livestock judging team, for the third consecutive year, won first place, against the keenest of competition. The team was coached by Prof. F. W. Bell. Twenty-seven teams competed from the United States and Canada.

However, Kansas State was forced to share the honors in its hour of triumph. Iowa State College pressed the Kansas team to a photo finish which showed the teams to have finished in a neck-and-neck tie—score 4,408 points each. It was the first time in the history of the contest that two teams had tied for

first. And the tie could hardly have come at a more inopportune time.

According to contest rules, a team must win three times (not necessarily consecutive) before it can come into permanent possession of the big bronze bull trophy. In the two previous years, Kansas State had scored two consecutive wins. Because this year's contest ended in a tie, officials of the contest were for a time undecided as to what disposal to make of the bull. At this moment of indecision, the fine sportsmanship of Prof. J. C. Holbert, coach of the Iowa State team, was shown, when he requested that Kansas State be given permanent possession of the trophy. He said, "Though there was

(Continued on page 52)



Top row, left to right—Prof. F. W. Bell, coach, Robert B. Shepherd, Willis R. Wenrich, William G. Alsop.

Bottom row—Jess R. Cooper, John P. Perrier, Gay S. Tuis, Joe W. Lewis.

All of the above students with the exception of Robert Shepherd were members of the Chicago team. The above group judged at Kansas City, with the exception of Gay Tuis.



# Barnwarmer Was the Best Ever



**B**ENEATH a canopy of autumn leaves in Nichols Gymnasium, approximately a thousand students and faculty members of the Division of Agriculture and their guests enjoyed an unusual Ag Barnwarmer on the evening of Novem-



The Dean Crowns a Queen

ber 5. The Barnwarmer is the outstanding Ag party of the year, and is unique in that boys wear overalls and girls wear gingham dresses and aprons. During the week preceding the party, all Ag students proudly wore the uniform of their chosen profession; and unfortunate indeed was the Aggie who appeared on the campus without overalls. His inescapable fate was to be ducked in the chilly water of an especially provided horse tank.

Music for the party was furnished by the Solomon F. F. A. orchestra, under the direction of Paul Chilen. This unusual band, composed entirely of high school boys, has gained nation-wide recognition for its unique character and clever repertoire of special numbers. Long will their "Girl Friend of the Whirling Dervish" be remembered.

A new note was struck in decorations, which were the special province

of Herman Rohrs. Each of the seven departmental clubs of the division decorated a small booth, depicting their club activities. These attractive booths, arranged around the edge of the dance floor, were brightly lighted, and added much color to the general theme of decoration. Shocks of sorghum and bales of hay and straw provided a "barny" atmosphere.

One of the most popular spots was the refreshment room, and rightly so, for the cider and doughnuts were never better. For the benefit of the statisticians and dietitians, 135 gallons of cider and 1800 doughnuts were consumed by the gay dancers.

The highlight of the party was the presentation by Dean Call of Miss Ethlyn Marks as the 1938 Barnwarmer Queen. Following the coronation, Miss Marks was presented with an orchid corsage and reigned over the dance from a beautiful white throne. Miss Marks is a member of Chi Omega, from Council Grove. The four charming attendant princesses were Mae Rogg, Bunkerhill; Maribelle Teichgraeber, Eureka; Mary Louise Arbuthnot, Hadam; and Burneta Young, Cheney. The princesses were seated on each side of the queen's throne and wore corsages of seasonal flowers.

Practically all the work connected with the party was done by the students themselves, with the aid of Assistant Dean Mullen; and the willingness of everyone to help made the party a grand success.—C. W. L., '40.

Lionel C. Holm, '26, is employed by the Farm Security Administration in the capacity of regional cooperative adviser. He was recently transferred to Amarillo, Tex., from Dodge City, where he worked as district supervisor for the administration.

Recent headline in The Kansas Industrialist:

"Prof. D. L. Mackintosh Shows Effect of Soybean Feeding" Faddist, or just vegetarian, Davy?

# Dairy Cattle Judges Travel

**"D**ID you say you placed that class 2-1-4-3? Why, I placed them 1-2-3-4 and I'll bet I'm right. Wait and see when Professor Cave gives us his placings. Say, we'd better prepare our reasons for this selection; we've only a few minutes."

This is what you could have heard, had you been near the dairy barn during September and early October as Professor Cave's advanced dairy judging class was preparing for the judging

and runs through pipes to the bottling room; and never comes in contact with outside air or human hands. It is considered one of the most sanitary systems in the country.

The contest at Waterloo was won by Michigan. Kansas State ranked ninth on all breeds, and in the upper ten on each individual breed. There were 12 teams entered in the contest, and they were very close together in total points.

After returning from Waterloo, Pro-



Left to right—J. Wallace Kirkbride, Charles W. Lobenstein, John R. Brainard, Noel N. Robb, Prof. H. W. Cave, coach, George W. Kleier (front, kneeling). Members of the 1938 dairy cattle judging team.

contests at the Dairy Cattle Congress at Waterloo, Iowa, and the National Dairy Show at Columbus, Ohio.

The team that went to Waterloo consisted of Bob Brainard, Wallace Kirkbride, George Kleier, and Bill Lobenstein. On the way to Waterloo, the team, accompanied by Professor Cave, stopped at some of the outstanding dairy herd farms and practiced for the contest. Of interest were the Nebraska U. dairy herd, Stephens Brown Swiss Farm at Fremont, Meredith Jersey Farm, Iowanola Guernsey Farm, Dr. Pearson's Brown Swiss herd at Des Moines, and the Iowa State College herd at Ames. Also interesting was the new system that the Iowa State College has for milking cows and handling milk. The milk comes from the milkers

fessor Cave started his boys practicing for the Columbus show. The members selected to go were Bob Brainard, Wallace Kirkbride, Noel Robb, and George Kleier. The team stopped at the University of Illinois, and spent a day there working out with other teams. We saw Illini Nellie, the Brown Swiss cow, holder of the world's record in milk and butterfat production. We also visited Ohio State University.

There were 26 teams entered in the contest and Kansas State placed seventeenth. Like a cold, bitter wind from the north, the team from Ontario, Canada, swept in and put first place on ice for themselves.

During the next few days, we watched the judging of the breeds of cattle and saw the selection of the grand champions.—G. W. K., '40.

# Ouch! These Beards Hurt!

THERE are few members of the Division of Agriculture that have not uttered these words at some time during their experiences with awned wheat. After coming in contact with these irritating beards, the question naturally arises as to their importance. Is their only role to play war with the invading harvesters? If so, why have them at all?

During the past three years, Dr. E. C. Miller, of the botany department, has worked intensively on the physiological study of awns on red-winter wheat in an effort to determine their real significance. It seems that all good hard-winter wheats of Kansas have awns; and in Dr. Miller's study he found definite relationships between the awns and the production of grain.

Alternating rows of Kanred, Blackhull, Fulcaster, Turkey, Kawvale, and Kanred X Federation were planted to insure representative samples of each variety produced under the same growing conditions. Just before heading time, the stems were tagged alternately throughout the field with white and yellow tags, the whites to be partially de-awned, and the yellows to be entirely de-awned. These two groups were then divided into four sets each. The first sets were de-awned just before flowering time; the second, at flowering time; the third, one week after flowering; and the fourth, two weeks after flowering.

When these sets were harvested, a definite correlation was found between the time of de-awning and the volume of wheat obtained. The earlier the awns were removed, the smaller the volume of wheat. Even the heads that were de-awned on one side only showed a difference in the volume of wheat on their respective sides.

The same result was obtained in yield. Normal heads, totally de-awned before flowering, showed a decrease of 11.3 percent in number of grains, and only 0.3 percent decrease when de-awned one week after flowering. Simi-

lar results were obtained on the partially de-awned heads.

There was a corresponding difference in the weight of grain per spike. This ranged from a decrease of 16.7 percent when clipped before blooming time to a 2.9 percent decrease when clipped two weeks after flowering. Apparently, awns are physiologically important in the maturing of the grain.

Another interesting feature of the experiment was the effect of clipping the awns upon transpiration. Pusa X Federation, a spring wheat that grows rapidly under greenhouse conditions, was used in this experiment. Although the amount of water lost from the head, when the awns were removed, was only 1 to 5 percent of the total water lost by the plant, there was a 40 percent decrease in the transpiration rate.

Well then, we must expect to contend with awns for some time yet, and look for satisfaction to the increased yields that awns seem to produce in this part of the country.—W. W. D., '40.

---

## He Liked the Barnwarmer

I received your letter, Dean, and needless to say, I was very glad to hear from you. I am sorry I was obliged to drop out of school this year after completing two years. I hope to be back some day.

I have accepted a position here at Solomon in the local schools as assistant band director. I picked up my sax and clarinet and joined the Solomon F. F. A. band which has been traveling around considerably and more recently played for the Ag Barnwarmer. I wish to congratulate the Barnwarmer staff for the fine displays, decorations, and the manner in which the party was conducted. I thought it was the best Barnwarmer I had ever seen; I only wished that I might have been out on the floor dancing and meeting old friends.

—Nolan McKenzie.



## DAIRY PRODUCTS TEAM HAS GOOD TRIP

### Dairy Products Team Goes to Cleveland

The annual National Student Contest in dairy products judging was held at the Municipal Auditorium in Cleveland, Ohio, on October 17, 1938. The contest was held in conjunction with the eleventh annual Dairy Industries Exposition.

This year the Kansas State College team, coached by Professor W. H. Martin, was composed of Willis Faulkender, Merle Parsons and Farland Fansher. In the contest seven samples each of butter, milk, cheese and ice cream were scored and criticized. The team placed fifteenth in the contest with twenty-three teams competing. In ice cream judging the team ranked third, with Willis Faulkender taking eighth place as an individual.

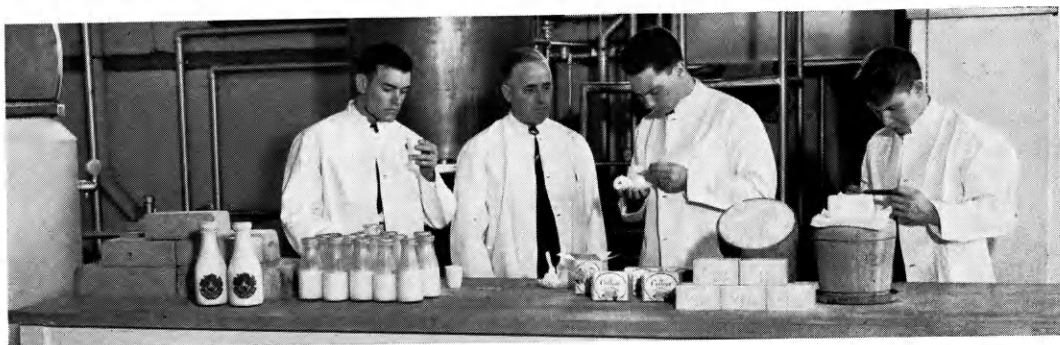
The contest was won by Cornell Uni-

versity, while Iowa State and Connecticut State finished second and third, respectively.

After the contest the team spent three days viewing the hundreds of exhibits and displays of the newest creamery equipment and supplies. During that time the team also attended several meetings of the International Association of Milk Dealers and the International Association of Ice Cream Manufacturers. Many of the outstanding leaders in the dairy industries world were heard at these meetings.

Among the many places of interest visited in Cleveland were the Cleveland Indian's baseball park, the harbor on Lake Erie, and the campus of Case University.

The team was fortunate enough to be able to attend the football game between Kansas State and Indiana University at Bloomington, Indiana, on the return trip. This was one of the highlights of the trip.



Members of the 1938 dairy products judging team, left to right, are: Farland E. Fansher, Prof. W. H. Martin, coach, Merle J. Parsons, and Willis B. Faulkender.

### Grote Wins Trip

A silver medal, a free trip to the International Livestock Show, and a one-year subscription to the Journal of the American Society of Agronomy are the dividends that Hilbert Grote received for writing an essay. His paper, "Eradication of Field Bindweed in the Great Plains by Tillage Methods," won second prize in the essay contest sponsored by the American Society of Agronomy and the Chicago Board of

Trade. Hilbert used his experience in the field bindweed control nursery at the Hays station and the available related literature as a basis for his article.

Maurice Peterson and Ogden Riddle, of Nebraska U., whose essays won first and third prizes, respectively, share honors with Grote. Peterson is enrolled in the department of agronomy as a graduate student this year. Richard Moore and Russell Gripp also represented Kansas State.

# From Colostrum to Skimmilk



FARMER Jones had been spying over the calf fence at the college dairy barn for two or three months. Two lots of dairy calves there had caught his attention. He discovered from the herdsman that an experiment was under way in which an effort was being made to find a way to substitute skimmilk for whole milk in starting calves. In fact, there were two experiments. The second one not only attempted to substitute skimmilk for whole milk, but attempted to substitute a substitute for skimmilk.

That sounds complicated, doesn't it? Let's see if it is. Eighty-seven percent of the dairy herds, so called, in Kansas consist of three milk cows or less. That means that on a great number of farms there isn't enough milk to pay to separate it. On a good many other farms there are periods of low production when dairymen are hard pressed to find enough milk to meet the demand. Frequently, there are uses for all the whole milk produced by the dairy. There isn't enough skimmilk available for feeding a young calf, so that if there is any way of making up a substitute for skimmilk, it would be an advantage to such farms.

The substitute for skimmilk is called "reconstituted skimmilk." It is prepared by adding one part of dried skimmilk to nine parts of water. To a daily ration of this is added 10 c. c. of cod liver oil concentrate. It was hoped that this remade skimmilk would take the place of natural skimmilk in starting calves, but it didn't quite do the job.

In this experiment bull calves were used—two Jerseys, two Holsteins, one Guernsey, and two Ayrshires. The remade skimmilk was fed for six weeks. At that time it was discontinued and dried skimmilk was added to the grain ration.

Both the Jersey calves died during the first month of the experiment. The other calves suffered from scours of varying degrees, though they pulled through the experiment. Their weights at six months averaged only 71 percent of normal. They were taken off the

skimmilk powder entirely at the end of six months and fed as calves are normally fed after being taken off of milk feeding.

At eight months the calves were again weighed. Average weights were yet only 72 percent of normal.

"Under the conditions of this experiment, calves did not do as well on reconstituted skimmilk as on normal skimmilk," says Prof. H. W. Cave, who was in charge of the experiment. "Calves fed by the methods used in this experiment were distinctly subnormal in both weight and height."

But the results from the other experiment in which ordinary skimmilk was substituted for whole milk after the calves had been fed colostrum for three days turned out better. For this experiment, eight male calves were divided into two groups which were fed exactly the same, except that the first group received 10 c. c. of cod liver oil while the second group got only five. The calves were changed immediately to skimmilk after having been fed colostrum for three days. The skimmilk was fed for six months.

When the calves were weighed at six months, it was found that they were very close to normal. The calves which were fed 10 c. c. of cod liver oil weighed 97 percent of normal, while those fed only 5 c. c. weighed 95.5 percent of normal. Both groups were entirely normal in height at eight months of age, two months after being taken off of skimmilk.

Results of this experiment show that satisfactory calves may be raised by feeding them entirely on skimmilk instead of using whole milk for a period of from two to three weeks, as is the usual practice.—F. F., '40.

Farm Sales Supervisor is the title of the position held by Earl C. Smith with the Central Life Insurance Company of Cincinnati. Mr. Smith, an Ag graduate in 1925, has his headquarters in Topeka.

# Crops Team Ranks Ninth

**T**HIRD place at Kansas City and ninth at Chicago, is the record of the Kansas State crops judging team for 1938. Outscored at Kansas City by North Carolina and Nebraska, the Kansas State team ranked third, followed closely by Oklahoma and Iowa in fourth and fifth places, respectively. North Carolina State College with 4,971 points out of a possible 5,400 captured first place. Nebraska, second. Score 4,924. Kansas State, third. Score 4,902. Nine teams competed at Kansas City.

Team members and alternates of the three winning teams at Kansas City were awarded medals. North Carolina received a gilded trophy. Two scholarships of \$50 each were given to Nebraska and Kansas State. The contest was sponsored by the Kansas City Board of Trade and the Kansas City Chamber of Commerce. Following the contest a banquet was given for team members and coaches at which time the winners were announced and the awards made. Dr. John Parker, Kansas State, was the principal speaker at the banquet.

At the International Crops contest in Chicago, the University of Nebraska

carried off first place, this being their third win in as many years. Nebraska's score was 4,138 points out of a possible 4,400. North Carolina was a close second with 4,122 points, followed by Oklahoma A. and M., 4,036 points, and Michigan State College, 4,032 points. Kansas State, 3,906 points, came in ninth. Twelve teams participated.

A silver loving cup was given to Nebraska, and \$100 scholarships were given to the schools whose teams placed first, second, third, and fourth in the contest. The Chicago Board of Trade and the International Hay and Grain Show cooperated in sponsoring the contest.

Team members who competed at Kansas City and Chicago were John V. Hansen, Hiawatha; Carl Claassen, Newton; and Philip Allen, Circleville. Malcolm Strom, Dwight, was the alternate. At Chicago, Hilbert Grote, Manhattan, was alternate. All are enrolled in agronomy with the exception of Allen, who is in agricultural economics. The team was coached by Prof. J. W. Zahnley, Department of Agronomy, assisted by Prof. C. D. Davis, also of the agronomy department.—P. T. A., '39.



The crops judging team works long and late at practice before going to Kansas City and Chicago. Left to right—John V. Hansen, Prof. J. W. Zahnley, coach, Phil T. Allen, E. Malcolm Strom, Prof. C. D. Davis, assistant coach, Hilbert A. Grote, and Carl Claassen.



# Plaques Come to Kansas State



Members of the 1938 meat judging team, left to right—Hoy B. Etling, Prof. D. L. Mackintosh, coach, Edward F. Moody, Evans E. Banbury, and William A. Ljungdahl. Etling holds the plaque earned as high man in beef judging at Kansas City. Ljungdahl holds plaque won at Chicago where he ranked high in pork judging.

## Men's Meat Team

The men's meat judging team competed in two intercollegiate judging contests this fall. The first contest was held at the American Royal, Kansas City, October 18.

Kansas State placed fourth, with 11 teams competing. The placing and scores of the first four teams were as follows:

University of Nebraska.....	2413
South Dakota.....	2357
Texas A. and M. College.....	2344
Kansas State College.....	2318

The Kansas State team consisted of Evans Banbury, Pratt; Hoy Etling, Copeland; William Ljungdahl, Menlo; and Edward Moody (alternate), Greeley.

Hoy Etling was second high indi-

vidual of the contest with a score of 818, of a possible 900, and was also high individual in the judging of beef, for which the International Livestock and Meat Board presented him a handsomely engraved plaque.

In the second contest, held in connection with the International Livestock show at Chicago, William Ljungdahl was sixth high individual of the contest, and was high individual in the judging of pork. Hoy Etling was fifth in the judging of lamb.

The University of Nebraska team won this contest also, with a score of 2299 points, of a possible 2700. Kansas State placed fifth in the contest in a field of 14 teams.

The team was coached by Prof. D. L. Mackintosh.—Hoy Etling, '39.

# Hens Lay Eggs at Night

WITH the crowing of the cock to denote the approaching dawn, the hen prepares for a busy day. If she is of a very industrious nature, she is off the roost while the day is yet dim, seeking out the feed hoppers and water buckets.

All day long she is busy making a living, scratching for grains, chasing insects, and gathering other bits of food in addition to the mash which is provided in hoppers. But, sometime during the day she must take time out for an hour or two while she modestly retreats to a nest to lay an egg, the product of a 25-hour manufacturing process.

A short time after the egg is laid, another yolk is ovulated (released from the ovary) in the hen, which again starts slowly down the oviduct. While the hen feeds the remainder of the day and roosts at night, the yolk is being surrounded by successive layers of albumen, shell membranes, and the shell proper. It is finally ready to be laid one or two hours later the next day than the day before.

When the time of laying for a certain hen has become progressively later in the day until four or five o'clock in the afternoon, ovulation normally does not occur immediately, so that the next egg is not laid at six or seven in the evening, but rather is laid on the morning of the second day as the first egg of a new series, or clutch. Thus, it would appear that the hen senses the approach of darkness and times her ovulation so as not to come up with an egg ready to be laid after dark.

Dr. D. C. Warren and Dr. H. M. Scott, of the Kansas State College department of poultry husbandry, carried out a series of careful experiments to demonstrate the effect of light upon ovulation. By closing up a room so that no trace of daylight could enter, and using artificial lights continuously, they excluded any perception of day and night from the hens. Result—the hens laid uniformly throughout the 24-hour day, and increased production slightly.

Then, by a gradual change, they gave the hens light at night, and kept the room in darkness during the day. The hens then laid almost entirely at night. With the resumption of continuous lighting, the hens again laid uniformly throughout a 24-hour period. Changes in lighting conditions required about 60 hours to bring about a change in laying time of the hens. This indicates that the egg formation process before ovulation is regulated by light, according to Doctors Warren and Scott.

Ovulation could not be entirely regulated by lighting, however. It seemed to depend somewhat upon a psychological perception of the hens, since they could not be brought to lay during the nights when continuous lighting was supplemented by natural daylight.

The stimulating effect of light upon egg production has been put to practical use by many poultry breeders who use artificial lights to lengthen the day for hens during that season of the year when days are short and when egg production is not normally at a peak. This corresponds to the time of year when egg prices are usually high so that the extra trouble and expense of early morning lighting is doubly rewarded by more eggs that bring more money.

—Clyde D. Mueller, '39.

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## Baker Goes to St. Louis

Ellwood Baker has accepted a position with the Doane Agricultural Service, St. Louis, Mo. This organization specializes in managing farms for insurance companies and individuals who own large acreages and who do not have the time or the knowledge and experience to enable them to look after the general planning and management of their properties. Ellwood will probably be located in Missouri. Other graduates of Kansas State connected with this organization are Jim Bonfield, '31, and Verner Danielson, '38.

## NEW SORGHUM VARIETIES COME TO FRONT

### Club and Early Kalo

Several new varieties of sorghums have been developed within the last few years, among which are two outstanding varieties of kafir, Club and Early Kalo.

Club was discovered by A. F. Swanson in a head row of Dawn kafir grown at the Fort Hays Branch Experiment Station in 1926. The plant is erect and attains an average height of 50 inches. It has a compact head with large white seeds tinged with red. A valuable feature of this variety is its ability to produce high yields where there are 100-120 growing days.

Yield of Club compared with other varieties at Hays, Kas., 1929-1936, is as follows:

Variety	Bu. per acre
Kalo .....	32.7
CLUB .....	29.1
Peterita .....	28.1
Modoc .....	26.5
Western Blackhull.....	26.2
Dwarf yellow milo.....	24.7

Club is drought-resistant and rela-

tively free from blasted heads. It has a high degree of resistance to chinch bug injury, is immune to Pythium's disease of milo, and has a relatively low rate of infection of kernel smuts. However, the plant may fail to mature if it receives late rainfall after growth has been retarded by drought.

Early Kalo is a selection also made from Kalo by A. F. Swanson, in 1931. Kalo was selected from a natural cross of Pink Kafir X Dwarf Yellow milo.

Early Kalo grows to a height of 36 to 46 inches, and matures about 10 days earlier than Kalo. The variety has a medium slender, leafy, dry stalk which produces erect cylindrical heads. The grain is medium in size, pale yellow in color, and resembles Pink kafir in shape.

Early Kalo is suited to a region of shorter growing seasons than Kalo for it matures in 85 to 95 days. For southern and eastern Kansas, there are other varieties that mature later which will outyield Early Kalo. Also, it is susceptible to chinch bug injury which is a factor in these regions.

Early Kalo is not recommended for harvesting with combine. It has a tendency to lodge when the crop is allowed to stand after ripening.

Early Kalo outyielded Kalo 10 percent at the Fort Hays station over the period 1933-1936.—J. E. Johnson, '39.

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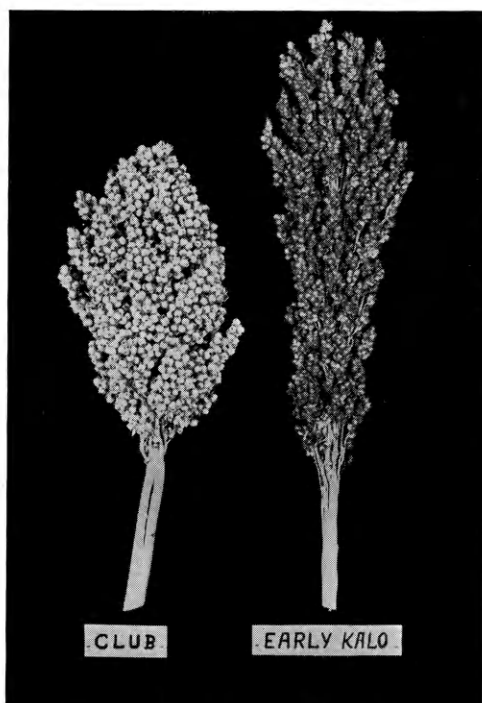
Eugene Harris, '38, assistant county agent in the division of extension, is now county agent in Seward county.

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A Kansas State graduate of '10, D. C. Bascom, has been transferred by the government from the Colorado Springs project to the water facilities division of the Soil Conservation Service at Dalhart, Tex. His position at Colorado Springs with the service was that of associate soil conservationist.

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Send this issue of the Kansas Agricultural Student home. Call special attention to articles on pages 49 and 56. Dad may be interested.



Good type heads of new varieties.



# THE KANSAS AGRICULTURAL STUDENT

KANSAS STATE COLLEGE OF AGRICULTURE  
AND APPLIED SCIENCE

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WILBERT W. DUTSMAN.....Agric. Economics  
FARLAND E. FANSHER.....Dairy Husbandry  
LINUS H. BURTON.....Horticulture  
MEADE C. HARRIS.....Milling Industry  
ROBERT N. SHOFFNER.....Poultry Husbandry

## TRAINING FOR LIVING

COINCIDENT with the organization and rise of college grade instruction in agriculture have developed two rather diverse ideals regarding curriculum building. One has a highly technical trend. "Learn to do by doing."

The other ideal, without denying the importance of perfected technique, tends to lay the emphasis on principles which underlie good agricultural practices rather than on the practices themselves. Both of these groups pay formal honor to the liberal or cultural phase of higher education but neither is willing to make extensive sacrifices for it.

It is possible that students of agriculture suffer a handicap because of this restriction on the liberal arts. Both in college and after graduation their social and civic activities bring contacts with educated people who have had these advantages. If in these general contacts they labor under the impression that the "Thirty Years War" is a story of marital infelicitities, that "free verse" is a gift book of poems, or that Tschaikowsky is a leading communist, their share in the conversation will prove unsatisfying to themselves and uninstructional to others.

Certainly, a college curriculum in agriculture should contain these three types of learning: technical training for proficiency in agricultural practices; basic science—physical, biological and social—for an understanding of the world in which the agriculturist lives; and a foundation in the cultural lore accumulated by the race through the historical ages.

Students of agriculture in Kansas State College are fortunate in that both tradition and practice support that view. The appointment of President Anderson in 1873 ended what might be named the classical period and thereafter saw more emphasis in the curriculum transferred to doing rather than thinking. Numerous trades were taught.

## INSTRUCTION IN LIBERAL ARTS VS. MECHANICAL ARTS

With the coming of President Fairchild, there appeared a much closer forecast of a modern curriculum in collegiate agriculture. He believed the function of the land-grant colleges included instruction in the liberal arts equally with agriculture and the mechanic arts. A typical assignment of that period contained one liberal arts course, one in fundamental science, one in applied science, all these five days a week, and industrial laboratories two or more afternoons each week.

Except for the industrials and strictly technical courses in agriculture and home economics, the girls and boys of the various classes had the same assignments. Some real scholars were produced under this system. The absence of intercollegiate sports and other forms of entertainment aided in this result. Students found time for extensive general reading and at least some independent thinking.

The present multiplication of departments in agriculture, seven compared with two of the early '90's, and the large number of courses offered by each department, greatly complicate the building of an undergraduate curriculum in agriculture. Many of the liberal and fine arts subjects are relegated to the preparatory years. Required courses of college grade in agriculture and biological science are increased. In practice this system, too often for the comfort of the faculty, turns out poorly educated graduates, men who are not ready to take their place among the company of educated persons in social and civil life. But little comfort can be derived from considering that all other college curricula likewise fail to attain the goal of the "full life" for all their graduates.

How may room be made for more so-called cultural subjects in the curriculum in agriculture? Shall I answer? At the expense of required technical courses. Possibly only two such courses should be required—one relating to animal husbandry and the other to plant production. If each of these were a five-hour course, nearly twenty semester hours would be released for cultural subjects. Impractical now? Perhaps so, but a starting point for a discussion of a fuller education for students enrolled in the Division of Agriculture.

—R. J. Barnett, Guest Editor.

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### STATISTICS SHOW—

Are too many people going to college? President Britt of Knox College, writing in Harper's Magazine, says "yes" and believes he can prove it statistically by showing that the present enrollment in the colleges and universities in the United States is over 10 times as big as it was 40 years ago; or one may cite the large numbers of freshman failures, which suggest that colleges are not careful enough in their admissions; or one may argue that the white-collar occupations are overcrowded and that college students are not willing to go back to the farm or other employment in their home community.

"Indeed," says President Britt, "the

curious fact about the overcrowding of the colleges is that everyone knows it—except the colleges. Some still think that they need more students and most of them are taking energetic steps to get them."

You may or may not credit President Britt's logic. For us at least, this seems to be a case of the type that inspired Mark Twain to exclaim "There's white lies, there's damn lies, and then there's statistics." More curious than the facts revealed by President Britt is this picture of an American educator who believes that we are being over-educated.

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A New England court ruled that at least one egg must be used in making custard pie.

## WADE BRANT TELLS OF TRIP TO CHICAGO

### A Letter Home

Kansas State College,  
Tuesday, Nov. 29, '38.

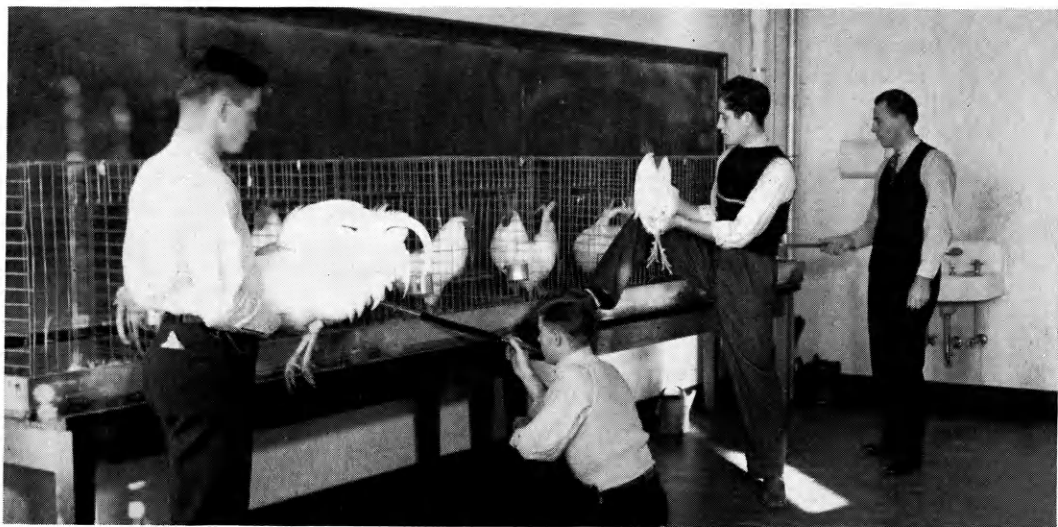
Dear Folks:

It's been quite a while since I wrote last, and I sure have a lot to tell you. Our team went to Chicago to compete with the teams of eight other schools in the Intercollegiate Poultry Judging Contest, November 26. The boys I went with were Cecil Robinson from Nashville, Kenneth Jameson of Ottawa, and Robert Shoffner of Manhattan.

We left here in Professor Scott's car early Tuesday morning. We stopped at the Universities of Missouri and Illinois to see the campus and to get in some practice judging. These practices certainly were worth while, for they accustomed us to judging strange birds.

of Illinois rink. We surely did cut some fancy figures—quite unintentionally, too. Thanksgiving day we drove to Chicago.

Friday was spent on a "market tour," sponsored by the Institute of American Poultry Industries. We visited a large cold storage plant where cold storage space is rented for keeping perishable foods such as eggs, butter, and fruit. Then we went to the Chicago Live Poultry Board where live poultry is bought and sold on the wholesale basis. This is to the poultry market what the Board of Trade is to the grain market. Next came the Chicago Mercantile Exchange where such products as eggs, butter, and meat are likewise wholesaled. While there, we were taken to the Institute of American Poultry Industries' kitchen and given an egg-nog apiece.



Looking for the fine points of these Leghorn chickens. Left to right—Cecil R. Robinson, Robert N. Shoffner, A. Wade Brant, and Kenneth R. Jameson are shown as they prepared for strong competition at Chicago.

We also visited the Camp Creek Duck farm near Urbana. This farm raises 160,000 birds a year, shipping some 5,000 a week to Chicago and New York. In addition, this farm sells approximately nine thousand dollars worth of duck feathers each year.

Professor Scott took us ice skating Wednesday evening at the University

Then we visited the Chicago Board of Trade and walked around the buying and selling floor, watching the men in the bidding pits. After that, we rode the elevated out to the stockyards, and had lunch as the guests of Swift & Co.

Saturday was the contest day, and I was the alternates. There were five

(Continued next page)



# Parasites That Pester Stock—

By

Dr. S. J. Roberts<sup>1</sup>

**E**VERY Kansas livestock man suffers losses each year to a greater or lesser extent due to parasites. Each year his feeding lots, farrowing pens, and pastures become more heavily infested unless he takes a vigorous attitude toward ridding his animals and their quarters of parasites.

This is a problem that he cannot afford to ignore. Even though his stock may appear to be in fairly good flesh, there are parasites present in or on nearly every animal. Diseases caused by them being chronic in nature, the owner usually doesn't worry about the animal until it becomes thin, rough-

coated, and weak. Meanwhile, he has lost money, time, and feed on the animal. It has been proven time and again that a regular year in and year out parasite control program on every farm brings large dividends.

In the control of internal parasites in farm animals, there are several preventive measures the individual farmer can carry out. These will tend to eliminate much of the parasitism on the farm.

1. Avoid overcrowding or overstocking any farm pasture or lot.

(Continued on page 51)

<sup>1</sup> Dept. of Surgery and Medicine, Division of Vet. Medicine.

## Wade Brant Writes a Letter Home

(Continued from page 48)

classes of exhibition birds: White Leghorn cockerels, Rhode Island Red Pullets, Rhode Island Red cockerels, White Wyandotte pullets, and Barred Plymouth Rock pullets. There were also five production classes which were placed entirely upon trapnest records. The five classes of market products included two classes of dressed market poultry, two of live market poultry, and 50 eggs to be graded according to the U. S. Standard for market eggs.

Saturday evening, there was a banquet with Dr. L. E. Card of the University of Illinois presiding. Afterwards, the results of the contest were announced and prizes awarded.

Kansas State's team came in first with a total of 3,705 out of 4,500 points, leading the Oklahoma A. and M. team by 105 points. Cecil Robinson was high individual of the contest with a total of 1,252 points out of a possible 1,500, for which he received a twenty dollar prize. He was also first in exhibition judging, and second in the judging of market products. For each of these he received a medal.

Robert Shoffner was second high in-

dividual with 1,240 points, and received an eighteen dollar award. Shoffner also placed second in exhibition judging, and fifth in market products. He was awarded a medal for his exhibition judging.

Kenneth Jameson was sixth high in the contest, and was given a three dollar award. He also received a medal for placing third in exhibition judging.

The Kansas State team placed sixth in production, second in market products judging, and first in judging exhibition birds, for which we received a trophy. We were also presented two other trophies: one, a permanent trophy awarded by the Purina Mills, Inc., and the other, a circulating trophy which was won last year by the Purdue team.

We started home Sunday and visited Iowa State College and the University of Nebraska on the way. We saw the beautiful state capitol building at Lincoln, and went up into its observation tower.

Yours,

Wade Brant, '40

## NO DEFEATS FOR KANSAS STATE GIRLS' MEAT TEAMS



In the above group Coach D. L. Mackintosh and members of the winning meat team (left to right), Ruth Avery, Elizabeth Brooks, Eena Carlisle, Ruby Randall, and Marialice Singleton. Circulating trophy is in the foreground.

### Girls' Meat Team

The Kansas State Home Economics meat team still has a clean slate, no defeats having been suffered since 1931. Contests entered this fall were at the American Royal Livestock Show in Kansas City, October 17, and the Mid-West contest held in connection with the Kansas National Livestock Show at Wichita, November 9.

Kansas State competed with Oklahoma A. and M. in both contests. At the American Royal, Kansas State scored 2481 points to A. and M.'s 2420. This gave us possession of the circulating trophy presented by the National Livestock and Meat Board for the second successive year. The 1935 team gained permanent possession of one trophy by winning three successive years.

After the contest at the American Royal, the girls assisted at the National Livestock and Meat Board exhibition booth. They considered it an honor and

privilege, and considered it a wonderful opportunity to meet people in the meat industry. As winners of the contest, they were featured in a 15 minute broadcast from station KCMO.

In this contest, Eena Carlisle was high individual with a total score 1104 out of a possible 1200. In identification, her score was 588 out of a possible 600, or 98 percent of perfection. This was a new record for any contest. Ruby Randall, with a score of 1094, placed second; and Elizabeth Brooks, scoring 1067, placed third in the entire contest.

Although Prof. D. L. Mackintosh was unable to go with the team to Wichita, his coaching showed up when the girls brought back to Manhattan first place in the contest, the three top ribbons, and a new high record in meat identification.

George Wellington, graduate assistant in animal husbandry, accompanied the team to Wichita.

—Ruth Avery, '39.

## PARASITES THAT PESTER OUR LIVESTOCK

### Parasites on Stock

(Continued from page 49)

2. Permanent pastures perpetuate parasites. (Feeding lots, too.) The ideal plan is to rotate lots or pens or to move them to clean ground each year, or several times a year.

3. Mixed grazing on pastures tends to decrease parasitism because eggs of a parasite of one farm animal are destroyed when infested by another species. Draining or fencing off water holes in pastures and filling up holes in hog lots will do much to prevent growth and multiplication of parasites, as moisture is essential for the eggs to develop to the infective stage.

4. Isolate new arrivals and heavily infested animals. Treat until free from parasites before putting in with other stock.

5. Have a proper place for the disposal of manure. It is poor hygiene to leave manure piles in the barnyard for hogs and horses to walk around and pick over. Also, it is poor hygiene to spread manure on pasture.

6. Provision should be made for an uncontaminated source of food and water. If you have a watering trough, have a proper overflow pipe so as to prevent a muddy hole around the trough. Food should be placed in mangers, racks, or troughs built in such a manner as to prevent contamination of food with feces. Hog troughs should be thoroughly cleaned at least once a week.

7. All young animals should be raised on clean lots until weaned, and then turned out on clean pasture since young grazing stock is the most severely affected by parasites.

The most important point in a continuous parasite control program is the regular treating of the stock for internal parasites. This treatment should be in cooperation with the local veterinarian as he is in a position to tell the type of worm infestation, the severity and the proper drugs and doses to administer to the individual animal.

Your horses must be free of internal

parasites if they are to be in good flesh and condition. Have them treated in the spring and fall for roundworms and strongyles, and also in the fall for bots. Sheep also should be treated twice a year.

External parasites are not of much concern to Kansas farms except for the swine louse which may be controlled by painting hogs with crude oil or crank case oil at weekly intervals for three weeks. Occasionally sheep breeders have trouble with the sheep tick. This may be controlled by dipping twice, 24 days apart.

Breeding animals especially deserve attention. Treat the females twice a year before they are bred. It is dangerous to treat a pregnant animal, as a dose of medicine sufficient to destroy worms is apt to cause abortion. Keep them in as clean lots as possible, before and after farrowing.

Cattle on the whole aren't infested heavily with internal or external parasites but occasionally in a herd of young cattle bloody dysentery develops, which may be caused by coccidia. The general discussion on internal parasites also applies to their control.

The successful livestock man is one who gives care and attention to his livestock; and, realizing the importance of combating the internal parasites, wages a constant, intelligent war against them.

Poisoning of grasshoppers by the thousands of bushels, and the lodging of these dead hoppers among the foliage of forage crops in such a manner that numbers of them might be consumed by livestock, has led to experiments to determine the possible danger or probability of stock poisoning. It has been shown that horses and cattle can digest daily from 20 to 30 grams of arsenic over a period of several months without any evidence of injury. Fatal dosage for horses and cows is 300 grams. It is estimated that more than a million poisoned grasshoppers would have to be eaten by a single cow or horse to effect fatal poisoning.

## BRONZE BULL COMES TO KANSAS STATE TO STAY

### International Livestock Exposition

(Continued from page 36)

a tie in this year's contest, I believe that Kansas State's record justifies an award of the trophy to that institution." Other coaches and their teams unanimously agreed with Professor Holbert. In this manner, the trophy came into the permanent possession of Kansas State College.

Professor Bell, however, requested that Iowa State keep the bronze bull one year before its retirement from an uncertain life on the show circuit.

The three teams responsible for this unmatched record are the teams of 1936, 1937, and 1938. The 1936 team consisted of Clare R. Porter, now supervisor of the South Central Kansas Experiment Fields at Kingman; Clarence L. Bell, now doing graduate work and part-time instruction at Texas A. and M. College; J. Alfred McMurtry, ranching at Clarendon, Tex.; Wilton B. Thomas, now in a packing industry at Oklahoma City; Roy H. Freeland, county agent at Iola; and Thomas M. Potter, now with the John Clay Commission Company, Kansas City, Mo.

The team of 1937 consisted of Elmer A. Dawdy, now assistant county agent, Salina; Roland B. Elling, county agent, Ottawa; Elmore G. Stout, Hereford breeder, Cottonwood Falls; Waldo W. Poovey, with the Bruce-Jones Livestock Commission Company, Wichita; Charles W. Pence, Farm Security Administration, Amarillo, Tex.; and C. Peairs Wilson, Department of Agricultural Economics, K. S. C.

The team of 1938 consisted of William G. Alsop, Wakefield; Jess R. Cooper, Preston (alternate); Joe W. Lewis, Larned; John P. Perrier, Olpe; Gay S. Tuis, Fredonia; and Willis R. Wenrich, Oxford.

William Alsop placed fifth in the entire contest. Joe Lewis placed second in horse judging, and tied for tenth in beef cattle; John Perrier tied for fifth place in horse judging, and placed tenth in sheep judging. Gay Tuis placed fourth in hog judging, and Willis Wenrich was third in sheep judging. In

judging different kinds of livestock, Kansas State was first in horses, third in beef cattle, fourth in sheep, and twenty-third in hogs.

The ratings and scores of the 27 teams that competed in the contest are as follows:

Kansas	4,408	Massachusetts	4,327
Iowa	4,408	West Virginia	4,327
Nebraska	4,394	Texas A. & M.	4,317
Ohio	4,393	Pennsylvania	4,291
Minnesota	4,387	Wyoming	4,287
Michigan	4,385	Illinois	4,286
Wisconsin	4,373	Mississippi	4,266
South Dakota	4,367	Colorado	4,262
North Dakota	4,363	Kentucky	4,251
Texas Tech.	4,357	Cornell	4,215
Oklahoma	4,348	Tennessee	4,118
Purdue	4,340	Connecticut	4,090
Ontario, Canada	4,304	New Hampshire	3,876
Montana	4,333		

In the intercollegiate livestock judging contest at the American Royal Livestock Show at Kansas City held October 15, 1938, Kansas State placed second with 17 teams competing. Nebraska beat Kansas for first place by nine points. Kansas placed first in hogs, second in sheep, fourth in horses, and fifteenth in beef cattle.

Membership of the Kansas City team was the same as the Chicago team, with the exception that Robert B. Shepherd, Alden, judged at Kansas City only and Gay Tuis judged at Chicago only. John Perrier tied for fourth place in the entire contest, and tied for fifth in sheep judging. William Alsop was sixth in the entire contest, tied for first in beef cattle, and tied for third in horse judging. Robert Shepherd was first in sheep judging; Joe Lewis tied for fifth place in sheep judging; Willis Wenrich tied for third in horse judging.

Following the American Royal contest, the entire class in Form and Function worked out on horses being shown at the American Royal. Also, a trip was taken to the farm of J. F. Begert, where Belgian horses were judged. Mr. Begert is the owner of this year's grand champion Belgian stallion at the American Royal. The Shorthorn farm of Tomson Bros. was also visited and the team worked out on some of the cattle being fitted for the annual sale of Tomson Bros.

Another training trip included the

(Continued on page 53)



## LIVESTOCK COACH HAS MADE RECORD AT KANSAS STATE

### Bell's Record Enviably

In the fall of 1918, there came to Kansas State College a man who was destined to help make big history in the Division of Agriculture. Floyd Wayne Bell came to the college as professor of animal husbandry and coach of livestock judging teams 20 years ago. Since that time he has made an enviable record which was topped out November 26, 1938, at the International Livestock Exposition when the twentieth team coached by Professor Bell at Kansas State won the third leg on the big bronze bull which means that this most coveted trophy of stock judging rings is to be returned to its pedestal in Waters Hall where it will permanently remain.

Professor Bell was born on a farm near Rome, N. Y., October 23, 1887. From Cornell he received his bachelor's degree in agriculture in 1911. In college he was a member of the varsity football team and a member of the dairy cattle intercollegiate judging team. After graduation, he was for two years graduate assistant at Ohio State University.

In the fall of 1912 he became instructor in animal husbandry at Texas A. and M. College and was associate professor at the same institution 1914 to 1918, when he was elected to the faculty of Kansas State.

In Texas he was secretary of the Texas Horse Breeders' Association and, upon coming to Kansas, was elected secretary of the Kansas Horse Breeders' Association and is also a member of the Kansas State Livestock Registry Board. He is a member of Farm House Fraternity, Alpha Zeta and Phi Kappa Phi.

The average standing or placing of the 20 Kansas State teams coached by Professor Bell has been 3.5. That is, his teams have ranked half way between third and fourth place as an average of 20 contests. One-fifth of the time his teams have ranked first. It

is believed that this record is unequalled at any other institution.

The ranks of K. S. C. livestock judging teams in the International Exposition contests from 1919 to 1938 are as follows:

No. Teams	K. S. C. Rank	No. Teams	K. S. C. Rank
18	3	21	6
21	4	23	2
21	5	20	3
20	3	20	2
19	1	20	7
24	5	22	10
22	4	24	5
23	2	27	1
21	3	25	1
23	2	27	1

### International Livestock Exposition

(Continued from page 52)

Fat Stock Show at Wichita and the farm of Harry Eshelman, where the team worked out on Percheron horses.

"The trips to these leading livestock farms and the various shows are of great value to the class and team members in preparing them, not only for their contest work, but also affording an opportunity for a greater appreciation of good livestock," says Professor Bell. "It enables them to become personally acquainted with outstanding producers of livestock. There are also the contacts with educators, and leading men in industries closely related to agriculture."

"Can't lose with bulls," says Oklahoma official who believes the purchase of ten good bulls would profit the state more than the money spent on football coaches at the University.

"I received the October issue of The Kansas Agricultural Student today. I have read every issue of the magazine for the past four years, but I must say that I enjoyed this one more than ever before. I also want to congratulate the Agriculture Division on the splendid Ag Barnwarmer. I hope the students enjoyed the band as much as I did."—E. R. Ausherman.

# Crop Reporter Goes on High

By  
R. B. Jaccard<sup>1</sup>, '37

**C**ROP reporting is an old profession and, while it is not in the strict sense of the term a scientific profession, it has become increasingly dependent on the advance of scientific knowledge of crops and of the conditions which affect their production. The most accurate crop reports are published monthly by the government, and estimates for the grain trade are made by six of the largest grain companies in the United States. These reports serve as a check against each other, and advance estimates of the prices of grain are determined by the estimates presented in these reports.

It would be well to explain first of all the function of a professional crop observer. His primary function is to give advance information on the condition of crops. Data as to the estimated final quantitative production of the various crops are desired. Other important information includes the movement of crops; that is, the dates when the crops are expected to arrive at the terminal markets; and the probable quality of the harvested crop. Important also is the location of areas of good and bad crops and certain types of crops to be used for special purposes. Information with regard to the possible disposition of the crops, the intention of the producers to ship or to store, whether the crops will move through normal channels, or whether a diversification of movement is to be expected, is also valuable.

A year's work for an observer would be somewhat as follows. Early in the spring the condition and appearance of the winter wheat crop would be started in southern Texas. Winter wheat would be followed northward to the South Dakota line. Then the observer would return to Texas to watch rust and crop development and to estimate probable harvested acreage and abandonment of fall-seeded acreage. Winter wheat,

soft and hard, is watched closely until the latter part of May from the Rocky mountains to the Ohio river and from Texas to South Dakota. A final check is made over this territory and the development of rye and oats is also observed.

Following this, the condition of the wheat crop is checked in the spring-wheat area of the Dakotas, Minnesota, and Montana. At the same time, observations are made on the condition of flax, oats, rye, and barley.

The work on spring wheat and durum



Bob Jaccard isn't looking for daisies. He is probably looking for evidence of wheat leaf rust. His job takes him from Texas across the states into Canada.

usually is finished by the first of July and observation of Canadian spring wheat is undertaken in the three prairie provinces. This crop is not followed so closely because by this time the American corn crop is developing rapidly. Observations on the corn crop are begun early in August and continue until the middle of October. At the same time notes are made on the condition of the soybean crop and, in some years,

<sup>1</sup>. Field representative, Cargill Crop Bulletin, Minneapolis, Minn.

estimates of buckwheat production are made in the New England states.

This means a great deal of traveling for a crop reporter. For example, the past year I covered 42 states and five provinces of Canada, traveling by airplane, bus, automobile, train, boat, horseback, and even some on foot.

From late October until early December, the observer is again in the field making study of the acreage sown to wheat, the surface condition and subsoil moisture. From then until March, the observer is in the office studying the figures he has compiled and preparing such data as may be of use in the field the following season.

The problems that face the observers are numerous. Some of the factors that affect the production of each crop are tillage practices, rate and depth of seeding, pathological factors such as leaf rust, glume blotch, septoria, and black chaff, weeds, possible dockage, shallow root system, hail, frost, effects of pasturing and of different weather conditions. Each of these factors has a different effect on spring and winter wheat. The effect of each factor must be told 30 to 90 days before harvest, if possible.

Efficient crop reporting requires a somewhat specialized training. This training is based primarily upon the study of agronomy, but a knowledge of ecology, pathology, genetics, entomology, meteorology, and economics is necessary. Training in writing and expression to enable clear presentation of ideas and viewpoints is particularly valuable in this work. Beyond this, the professional crop reporter must have had valuable practical experience in observing crop conditions and their effect on crop production.

Naturally the constant traveling that is a part of the work requires a strong physique, patience, ability to tolerate hotel food and solitude, and the ability to work many hours a day and seven days a week during the growing season. However, the compensation is more than adequate for the discomforts involved.

## National Honorary Organizations

Two national organizations on our campus, Phi Kappa Phi and Alpha Zeta, recognize high scholastic attainment by inviting to membership only those who stand above the average in scholarship. Phi Kappa Phi is primarily a faculty organization which admits undergraduate students; Alpha Zeta is a student honorary fraternity which admits faculty men as associate and honorary members.

The purpose of Phi Kappa Phi is to promote scholarship among American college students by electing to membership the upper 5 percent of the senior class from each division each semester. It seeks to foster learning by admitting the honor student to membership on an equal basis with faculty members.

Alpha Zeta, by placing emphasis on scholarship to the extent that eligibility is limited to the upper two-fifths of the sophomore, junior, and senior classes, chooses its members primarily upon a basis of character, personality, and leadership. Election of new members is held each semester, and a student is not eligible until the second semester of his sophomore year. Alpha Zeta meetings seek to promote the interests of agriculture. Membership in one or both of these worthy organizations should be the aim of every ambitious student in agriculture.

### Atkins to Study at Minnesota

I. M. Atkins, '29, has taken a leave of absence from his work at the Texas substation No. 6, Denton, Tex., where he is in charge of plant breeding in a cooperative project of the United States department of agriculture. He is working on his doctor's degree at the University of Minnesota. He received his master's at Kansas State in 1936.

Donald E. Charles, senior in Animal Husbandry, is the winner of the fifty dollar essay contest recently sponsored by Swift & Co.

# Farmers Ride on Rubber

By  
E. L. Barger, *Agr'l Engineer*

As told to  
I. Keith Harrison

ONE of the inventions which made possible the modern motor car has, within the last few years, entered another field of usefulness. Beginning about 1930, pneumatic tires have gradually been applied to tractors and other farm implements. By 1933, the practice was common enough to warrant rather extensive research by experiment stations. Kansas experiment stations have done a great deal of work along that line.

What, if any, are the advantages of rubber tires over steel? Rubber tires and their special wheels cost more than the standard steel wheels. Is the extra cost justified? What about inflation pressures? How long will the tires last? What of inconvenience arising from punctures? These are some of the questions that might be mentioned.

Pneumatic tires for tractors have several distinct advantages over steel

wheels with lugs. Greatest of these is decreased rolling resistance. Less power is required to move the tractor itself. On an average of many tests under various conditions, a rubber-tired tractor uses only 50 to 55 percent as much power for self propulsion as the same machine equipped with steel wheels. This permits pulling of heavier loads at the same speed, or the same load in a higher gear. Net result: saving of fuel, up to 25 percent.

Rubber tires stir up less dust. That is something. It means greater comfort and convenience for the operator, and tends to reduce machine wear.

However, rubber tires on tractors are by no means a cure-all. They have a few definite limitations. On slick ice, greasy mud, or even damp or succulent vegetation, they may slip. Chains, similar to car chains but much heavier, are not entirely satisfactory. But what can



Rubber tires on tractors stir up less dust, decrease rolling resistance, make a saving in fuel consumption and are much more comfortable and pleasant to operate.



## TRACTORS ON RUBBER MAKE FARMING MORE PLEASANT

be used in their place? Single rubber tires are sometimes difficult to hold on ridges. Dual rear tires solve this problem and are not too expensive.

Driven across ridges, rubber tires often set up a rhythmic bouncing, hard to overcome. If the ridges are not too high, cross them at an angle.

Application of rubber tires to steel-wheeled tractors created several new problems. Tractors so equipped are commonly operated at higher speeds. Without a load, they coast when the clutch is disengaged. Both of these factors necessitate a better braking system. Rubber tires favor road use, and this, in view of greater speed, requires better steering mechanism. Several makes of tractors are now being sold which are designed for use only on rubber tires. These particular problems have been partly solved on such tractors.

It seems likely that because of the additional road use tractors will in the future be subject to vehicle laws and highway taxes, regardless of the type of fuel used.

Although punctures do occur, they have proved to be a negligible factor. Repairs on tractor tires have been quite satisfactory. Frequent inflation is not necessary. Regular checking of the pressure is, however, desirable. The tire body can be seriously damaged by use when under-inflated. Some operators do not inflate more often than once in six months. Thirty-day intervals are more common, and manufacturers recommend weekly inflations.

Many farm tires have been in service now for six years, and are still going. Wear and tear does not seem to be excessive. Experience to date indicates that, properly cared for, tires should be good for the life of a tractor, though some will need retreading. Retreading of tractor tires is more satisfactory than retreading of automobile tires because lower speeds and pressures are used. For long life, keep in a dry, shady place when not in use, and protect from oil, grease, and gasoline.

A troublesome problem has been the weight on the rear wheels. Traction of a rubber tire depends on friction between tire and traction surface. To increase friction, auxiliary weights have been added to the rear wheels, but addition of weight tends to nullify the reduction of rolling resistance. Certain hitches tend to transfer some weight to or from the tractor drive wheels.

This weight problem is complex. Much research work is being done on it. One method of adding weight is by partial filling of the tires with water, before inflation. More common, however, is the use of weights bolted to the wheels. These can be purchased in sets of four or six and weigh 100 pounds or more apiece.

Rubber tires are also gaining in popularity on implements other than tractors. On combines, corn pickers, and wagons, rolling resistance is a big factor. Rubber reduces their draft about 50 percent.

Wagons and tractors equipped with rubber are excellent hauling units on surfaced roads where lugs are prohibited. On plows, where rolling resistance is relatively unimportant, the advantage of rubber tires is convenience in getting to and from the fields.

A hindrance to wider adoption of rubber is higher cost. Also, many implements are idle much of the year. Standardization of tire sizes and use of interchangeable wheels will overcome some of this difficulty.

For haying operations, the rubber-tired equipment seems almost ideal. The only apparent disadvantage is some tendency to slip on wet hay when turning corners, and perhaps too much bouncing on rough ground, causing a rough job of mowing. However, there is no tendency to punch hay into the ground or tear up the field as with lugs; and rubber has more traction than smooth steel wheels.

On the whole, application of pneumatic tires to farm equipment has been a great step forward in making farming more pleasant and profitable.

# Get Ready for a Better Job

THE question frequently is asked whether college letters, medals, keys, dues and clubs are worthwhile. Should an Ag student, in addition to his classwork, lead the "pepper-uppers," battle with the "gridiron cats," or engage in other extra-curricular activities?

Business men and faculty folk agree that a student who participates in outside activities is more readily accepted for a job than one who can boast only of straight A's. It is usually our friends, the scholars, however, who win the fellowships. Grade points do measure an individual's mental capacity and learning ability, but extra-curricular activities are a partial index to his practical abilities.

Unfortunately, the bookworm must some day do more than hang facts on the hooks of his brain, according to Frank O. Blecha, personnel representative of the Division of College Extension. Whether a local farm-bureau member, a teacher, or a research man, he will encounter a need for expressing to others his experiences and conclusions. The knack of doing this doesn't come entirely from "book larnin'." It is Mr. Blecha's opinion that the graduate today must know how to meet people, how to impress them favorably, and how to get along with them in his work.

"Many people know how to do things better than they do them," says Prof. F. W. Atkeson, head of the department of dairy husbandry. "The boy with initiative who knows how and can work with people is the one who will meet with success."

After one has settled down to his scholastic work, and no sooner, it is time to cultivate outside activities. Determining the number of activities in which one should engage is not a simple problem. The number of activities successfully undertaken varies greatly with the individual's interest and ability. No definite rule can be established. Neither is there any correlation between

grades and activities. Some Phi Kappa Phi students are carrying surprising extra-curricular activities, and other students are barely dodging "flunk" slips with no activities other than "jellying" and oversleeping.

It is President Farrell's belief that a student's first obligation is to perform creditably his regular work. Then, the more activities he can carry, the better. If he is working his way, obviously he cannot carry the load of a student who isn't.

College should not be a joy-killer, and, if it is, it is the belief of Dr. W. F. Pickett, head of the Department of Horticulture, that a student should take fewer hours, drop his dish-washing job, or give up his apple judging team. We all like and need some recreation and fun, whether browsing in the library, playing ball, or wearing out shoe leather at a "varsity."

The best way of discovering the amount of time one may safely spend on activities is to choose one major activity, such as judging, debate, or football team, and one minor diversion, such as a departmental club, which requires little time. A student usually enters that activity for which he believes himself best fitted and in which he finds greatest interest. Much benefit will be derived if he balances his interests by contacting some groups outside of agriculture, such as the Y. M. C. A. or a literary society. Department heads are agreed that too few agricultural students enter into activities beyond the field of farm problems.

"Four things a college student should do aside from his college work," says Prof. L. F. Payne, head of the department of poultry husbandry: "Form the habit of reading a few good magazines and books, including the ancient historical writings; develop a hobby which is adaptable in later life; participate in some sport or physical exercise suitable for post-college years; cultivate some good friendships among students, faculty, and townspeople."

—Geo. W. Aicher, '39.

# Farming in the Philippines—

By

F. S. Zamora, '39

**T**HE Philippine Islands, constituting the largest island group in the Malay Archipelago, were discovered by Magellan in 1521, conquered by Spain in 1565, and deeded to the United States by the Treaty of Paris following the Spanish-American War. In the group are 7,083 islands, extending 1,152 miles from north to south and 682 miles from east to west. The largest island, Luzon, where I live, contains 40,814 square miles, about half the area of Kansas.

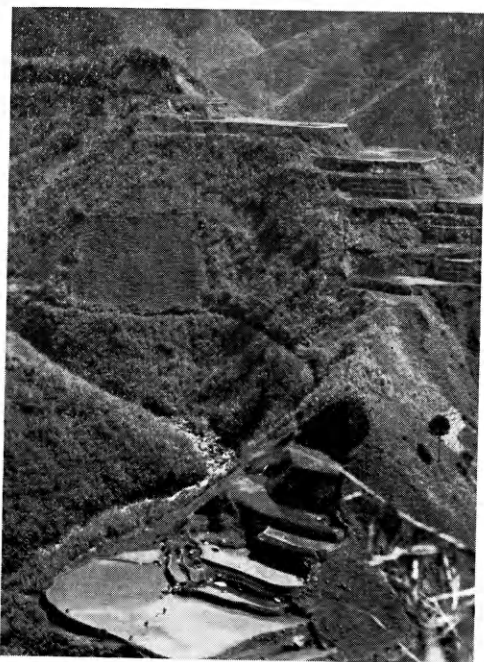
Luzon, whose topography is typical of the islands, is mostly dotted with mountain ranges along the Pacific coast. On the China coast, there is a narrow strip of plain which is under cultivation and used chiefly for raising rice in the wet season, and corn, sugar cane, and vegetables during the dry months of the year.

Total area of the islands suitable for cultivation is 45,900,000 acres, or 63 percent, but only 9,743,900 acres were actually utilized in 1937, so there will be plenty for me to cultivate and graze when I return. About 96 percent of the land under cultivation is owned by Filipinos whose farms average only approximately six acres in size. There are more than 2,000,000 such farms. Apparently, the Filipinos are not very industrious farmers, for they farm barely enough land to gain a livelihood. Opportunity is great for the trained agriculturist to educate Filipino farmers in principles of cultivation and cropping.

In some parts of the islands, the method of soil cultivation is still primitive. Most of our plowing is done with a crude plow, using water buffalos during the wet season, and oxen during the dry season. Tractors and combines are almost unheard of. In 1936, there were 2,272,319 water buffalos, 1,483,260 cattle, 400,250 horses and mules, and 3,018,758 hogs. Water buffalos are like oxen with long horns, but with dark skin and sparsely spread hair, big brutes, docile, and as friendly and in-

telligent as the horse. Their origin is in India. They are sometimes butchered, for their steaks are quite tender and equal to cattle steak. The Filipinos are doing nothing for their improvement. This is another job for college-trained Filipinos.

Our cattle are undeveloped and unimproved. They resemble the primitive cattle you would expect to find in uncivilized parts of India or China. They are what you would call "scrub," with-



Courtesy Major L. R. Crews.

The "field" shows three persons knee-deep in mud setting rice seedlings. Field is about half planted. (Pictures by courtesy of Major L. R. Crews.)

out the conformation of the Herefords here. Our people are becoming conscious of the value of an early maturing and quickly fattened type of beef cattle, and we are importing some of your good bulls to improve our scrub cattle. We have a few milk cattle—Holsteins, Ayrshires, Jerseys, and Shorthorns—but our children subsist

## FARMING IN THE PHILIPPINES

largely on goats' milk which is as good as cows' milk but is not produced in sufficient quantity.

Our horses, which are small and swift, are of Arabian and Turkish stock, and are used for transportation. Mules are used for certain types of labor, and come, probably, from Missouri.

Most of our hogs are of native stock, thin, and boned like the famous Arkansas razorback, but we have been importing Poland Chinas, Duroc Jerseys, and others, mostly from the United States.

**THE** soil is the primary source of livelihood of the Filipinos. This soil is very rich, composed of humus, decayed organic matter, and pulverized sandstone. The reaction of the valley soils is decidedly acid; of coastal soils, alkaline. On this soil are raised sugar, abaca, tobacco, coconuts, copra, coconut oil, rice, corn, coffee, and several varieties of oriental and occidental vegetables.

Rice is our chief agricultural product, and also our chief food. Rice production is difficult, tedious and time-consuming. It is not like wheat production which requires only the preparation of the seedbed and the sowing. In May, towards the end of the dry season, we prepare our seedbed and thresh our rice.

We plant the seed by making small, shallow holes in the prepared seedbed with four or five pointed sticks arranged in a row. In these holes we put a half handful of rice seed. This is done by hand, requiring the services of the whole family and more, and is done before the rainy season. It takes May, June, and half of July for the rice seedling to attain a height of one and one-half feet.

When July comes with its daily rains, we begin to prepare our fields for rice. First, we cut the grass on the field with a harrow equipped with cutting blades, and then hitch our carabaos (water buffalos) to our plow and proceed to plow the ground which is mostly three or four inches under water. Big clods

of soil are turned up during plowing, so the field is harrowed. The best field for planting is one that is plowed to a depth of about one and one-half feet, and harrowed into a smooth, mellow mud that is soft to the touch and free of lump.

When the field is so prepared, the rice seedlings are pulled from the seedbed and their roots washed. They are then transplanted to the prepared rice field and spaced, according to the richness of the soil, from six to nine inches apart in hills. The transplanting is often done by hand. Towns and villages usually are almost deserted during this season. Transplanting takes two months, more or less, according to



Courtesy Major L. R. Crews.

Terraced rice fields above Ogorot town. Note thatched huts of bamboo; also white school house at right.

the variety planted. Late varieties are planted early, and early varieties, late. The planting season usually is the latter half of July, August, September, and the first part of October.

Another method of planting used is broadcasting the rice grains in the muddy field. This method is used only for a certain variety of rice raised in the southern part of Luzon.

Rice is also planted on the sides of the hills and mountains. The hillside is cleared of shrubs and brush. Sometimes the whole slope is burned off, but this is not wise, for lumber may be destroyed, and, more important, the humus so necessary to the fertility of the soil is destroyed. Rice seed is then planted by hand in hills two or three



## FARMING IN THE PHILIPPINES

feet apart. Planting is done before the June rains, and harvesting comes in October.

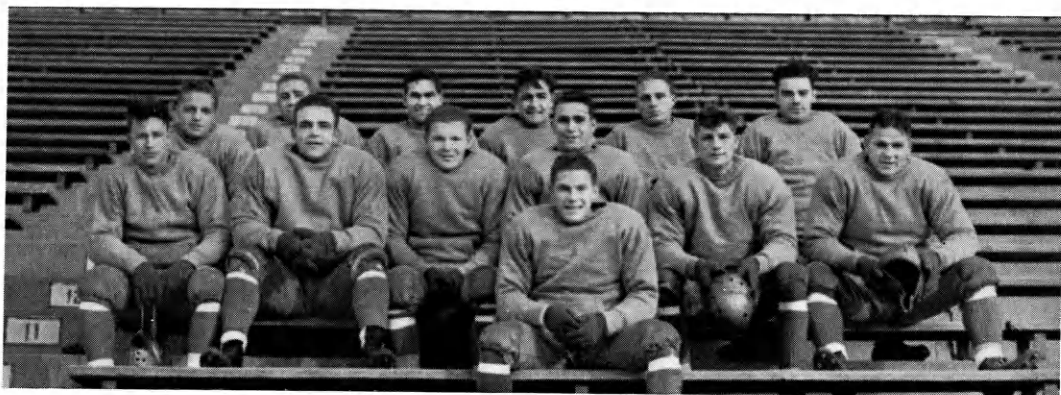
In the valleys, there is not much to do during the rainy days except to see that the rice paddies or plots are under water. Sometimes grass grows very abundantly in the plots, and they must be weeded lest the rice be choked. Also, we have much trouble from alkali which hinders the growth of rice. We have to drain the plots frequently and renew the water.

The harvesting season begins the last half of October and ends about January 18. The temperature drops to the upper sixties, which is considered cool because of the abundance of moisture in the air. At noon, it is blistering hot under the sun, but cool in the shade.

Towns and villages are usually vacated during the harvesting season. Everybody joins in the work. Panicles of rice are cut from the stem by hand, one panicle at a time, using a crude cutting knife fitted between the middle and the fourth fingers and attached to a wooden handle. A time- and labor-saving reaper to cut our rice would be a valuable aid.

During the harvesting season, many interesting things happen. The people have lots of fun harvesting. Everybody rejoices in the harvest, whether the crop is good or not. It is also the season of love-making or, rather, "pitchin' the woo" as it is called at K. S. C. The spirit of Thanksgiving is in the air and everybody is happy that a new harvest is come.

## Many Ags on Football Squad



Top row, left to right—Kenneth Nordstrom, center; Richard Magerkurth, guard; Jack Blanke, back; Ralph Huffman, tackle; Chris Langvardt, end; Kenneth Makalous, tackle.  
Second row—Merle Whitlock, back; Bill Beezley, guard; James Brock, back; Don Crumbaker, end; Emile Kientz, end; Carol Coleman, guard.  
Front—Eugene Fair, back. (Staley Pitts, guard, not present.)

Meet those men of muscle and grit that have represented the Division of Agriculture on the football field this year. These boys have made good on the gridiron and have not stopped at that, for in this group we have some of the Alpha Zetas and other good students of the division.

There's the old saying about all work and no play doing something to the kid. These boys have seen to it that they got their share of both work and play for there is a lot of work and long,

late hours connected with making the varsity. This holds true, not only for football, but also for other competitive sports and judging contests in which "aggies" participate.

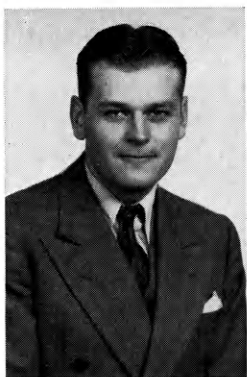
Our Ags have not only done their full part on the football field, but in the class room as well they have maintained good records. Of the above group Kenneth Nordstrom, Bill Beezley and Don Crumbaker are members of Alpha Zeta.

—W. Duitsman, '40.

## STUDENT DAIRY JUDGES AT KANSAS STATE

### Porter F. F. A. President

Walter H. Porter, Council Grove, a freshman in the Division of Agriculture, was elected president of the Kansas Association of Future Farmers of



WALTER PORTER

America at their state convention last May. The state association has a membership of 3,562 from the 141 vocational agriculture departments in Kansas high schools.

Porter is the third president in succession to come to Kansas State. John G. Dean, a junior in agriculture, was president in 1936-'37, and Albert S. Coates, a pre-vet in general science, was president of the state association in 1937-'38.

At the National F. F. A. convention last October which was held in Kansas City, Coates was elected third vice-

president, being the third Kansas boy to be elected to a national office in the past 11 years. The National F. F. A. Association has a membership of 171,000.

### Bull Without a Name

It remained for the editor of the Iowa Agriculturist to point out that the proper name for the big bronze bull is not "Ferdinand," because, the editor says, this bull is no sissy and the "Ferdinand" of fiction was not of the "he man" type.

The Iowa student magazine has hung the name "Slug" on the heroic figure. We don't like "Slug" because it rhymes with "mug." There would be insinuation and castigation in any name that rhymed with "mug."

We can remember when the ladies were reluctant to use the word "bull." It was always "Duke." But no common name will do for this bull. What say, Aggies? Name him.

It wouldn't be a bad idea for our students to get the habit of trading with our advertisers and remind them that we have seen their advertisements in the Kansas Agricultural Student.

## A Group of Promising Future Dairymen



Winners in the student dairy judging contest, May, 1938. This contest is sponsored each year by the Dairy Club of Kansas State College.

Left to right, back row—George W. Kleier, J. Wallace Kirkbride, Walter S. Robinson, Max L. Dawdy, George W. Cochran. Front row—Jim F. Cavanaugh, W. John Wilson, William H. Winner, Noel N. Robb, Donald A. Kleisen, Farland E. Fansher.

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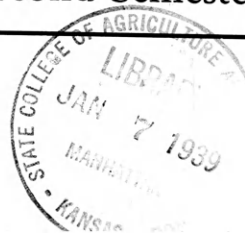
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February 9

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63

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