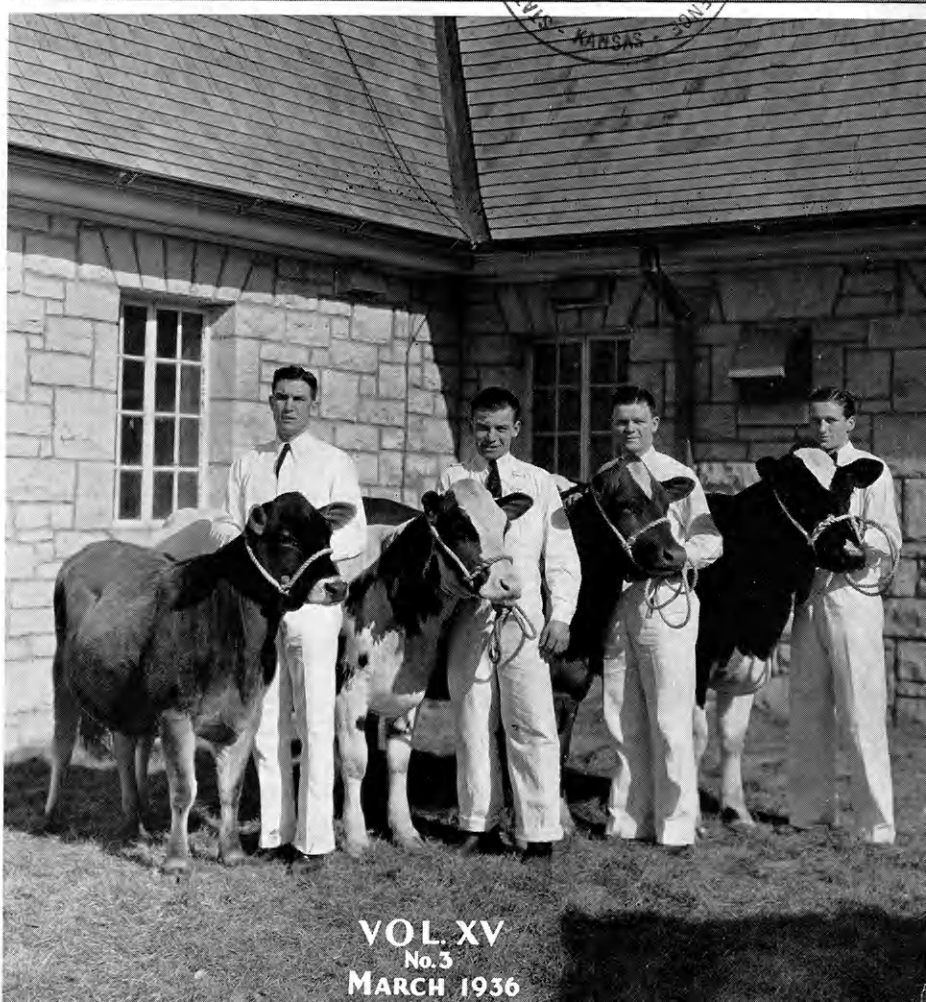
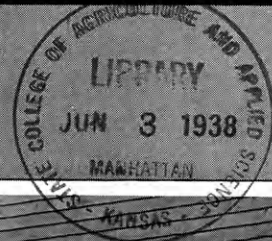


THE KANSAS
AGRICULTURAL STUDENT
MANHATTAN, KANSAS



VOL. XV
No. 3
MARCH 1936

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The Kansas Agricultural Student

VOL. XV

Manhattan, Kansas, March, 1936

No. 3



BLUE RIBBON WINNERS IN THE LITTLE AMERICAN ROYAL

The two grand champion showmen are seated in front with their trophies and rosettes. The other six champion showmen are shown with their rosettes in the second row. The center man in the second row placed first in two classes and each one in the rear placed first in a class.

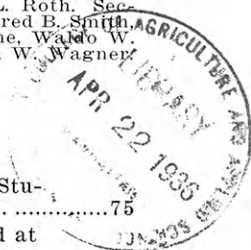
From left to right those in the picture are: Seated—C. Peairs Wilson, Vernal G. L. Roth, Sec-
ond row—Hugh H. Gillespie, W. Dean Abrahams, Elmer A. Dawdy, D. Dean Dicken, Fred B. Smith, W.
Clifton Dawson, William G. Alsop. Third row—Roland B. Elling, James F. Mugglestone, W. W.
Poovey, Clyde C. Reed, Harvey E. Goertz, Arthur O. Jacobs, Lawrence E. Fields, Irvin W. Wagner.

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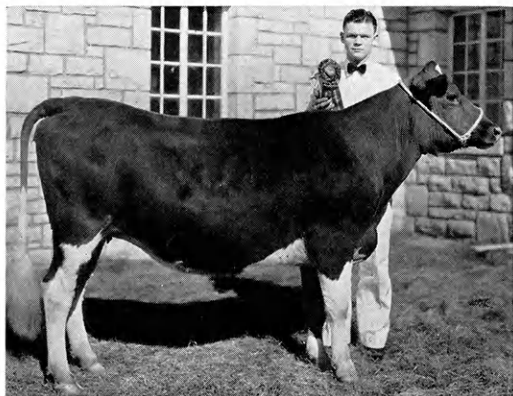


Little American Royal

C. Peairs Wilson, junior from Anness, Kan., was awarded the grand championship trophy in the animal husbandry division of the Thirteenth Annual Little American Royal held in the judging pavilion February 6, 1936. He showed a Hampshire ewe. In the



C. Peairs Wilson and the Hampshire ewe with which he not only won the championship of the sheep classes but also the grand championship of the Block and Bridle division.



Vernal G. L. Roth and the Guernsey heifer with which he won not only the championship of the Guernsey classes but also the grand championship of the Dairy division. (See cover page.)

dairy division of the contest the grand championship was won by Vernal G. L. Roth, junior from Emporia. He fitted and showed a Guernsey heifer. The

champions in each kind of livestock in the animal husbandry division were:

C. PEAIRS WILSON, Sheep
CLIFTON DAWSON, Horses
WILLIAM G. ALSOP, Beef Cattle
W. DEAN ABRAHAM, Hogs

The breed champions in the dairy division were:

VERNAL G. L. ROTH, Guernseys
HUGH H. GILLESPIE, Ayrshires
ELMER A. DAWDY, Holsteins
FRED B. SMITH, Jerseys

Those placing first, second, and third in each of the ten classes in the animal husbandry division and in each of the eight classes of the dairy division are as follows:

ANIMAL HUSBANDRY DIVISION

Draft Mares

CLIFTON DAWSON, Norcat
EDWIN L. SCHUETZ, Mercier
GILBERT A. GUTHRIE, Walton

Draft Fillies

D. DEAN DICKEN, Winfield
G. EDWIN JORDAN, Beloit
WILLIAM H. DIETERICH, Minneola

Southdown Sheep

WALDO W. POOVEY, Oxford
ELTON ENDACOTT, Manhattan
MERLE A. WEBB, Meriden

Shropshire Sheep

JAMES F. MUGGLESTONE, Berkeley, Calif.
JESSE R. COOPER, Preston
WILSON S. MARSH, Chanute

Hampshire Sheep

C. PEAIRS WILSON, Anness
CLARENCE L. BELL, McDonald
ROY H. FREELAND, Eflingham

Shorthorn Cattle

LAWRENCE E. FIELDS, McPherson
FRED L. FAIR, Alden
EDWARD SMERCHEK, Garnett

Aberdeen-Angus Cattle

ROLAND B. ELLING, Manhattan
JOHN R. DUKELOW, Hutchinson
ROBERT SWARTZ, Everest

Hereford Cattle

WILLIAM G. ALSOP, Wakefield
ELMORE G. STOUT, Cottonwood Falls
CARL M. ELLING, Manhattan

Fall Gilts

D. DEAN DICKEN, Winfield
J. EDWIN McCOLM, Emporia
EMMETT B. HANNAWALD, Pratt

Spring Gilts

W. DEAN ABRAHAM, Wayne
CARROL L. WAHL, Wheaton
EMMETT B. HANNAWALD, Pratt

DAIRY DIVISION

Ayrshire Cows

HARVEY E. GOERTZ, Hillsboro
HERBERT S. DAVIES, Manhattan
BUD MUSSON, Geuda Springs

Ayrshire Heifers

HUGH H. GILLESPIE, Arkansas City
CECIL R. ROBINSON, Nashville
ELEANOR GLASS, Manhattan

Guernsey Cows

IRVIN W. WAGNER, Cherryvale
 DEANE R. SEATON, Abilene
 EUGENE P. DAVIES, Winchester

Guernsey Heifers

VERNAL G. L. ROTH, Emporia
 MAX M. DICKERSON, Parsons
 JOHN R. BRAINARD, Carlyle

Holstein Cows

CLYDE C. REED, Kanopolis
 HAROLD J. SCANLAN, Abilene
 FRANK BOTT, Zion, Ill.

Holstein Heifers

ELMER A. DAWDY, Washington
 HOWARD O. MEYER, Basehor
 MERTON V. EMMERT, Blue Rapids

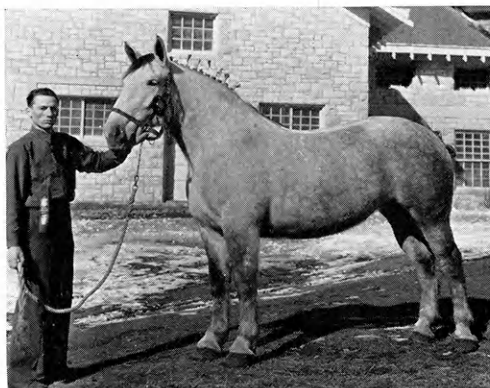
Jersey Cows

ARTHUR O. JACOBS, Harper
 CHARLES W. BEER, Larned
 CHARLES G. REED, Stockton

Jersey Heifers

FRED B. SMITH, Highland
 C. ISAAC KERN, Cedar
 MORRIS W. PHILLIPS, Stockton

and the beautiful evening of February 6 boosted the zeal of all concerned in putting over the big show. The contestants showed before a record crowd and it was necessary to seat a large number of people who did not come in time to get seats on the south side of the pavilion, on the north side. As the

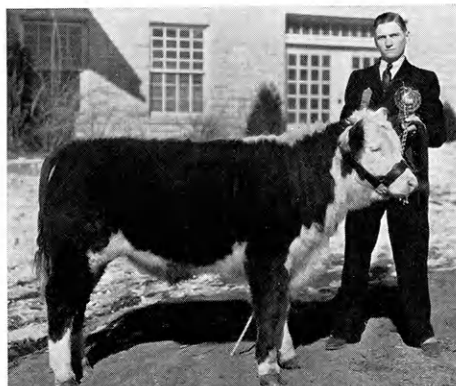


Clifton Dawson and the Belgian mare with which he won the championship of the horse classes.



W. Dean Abrahams and the Duroc Jersey gilt with which he won the championship of the hog classes.

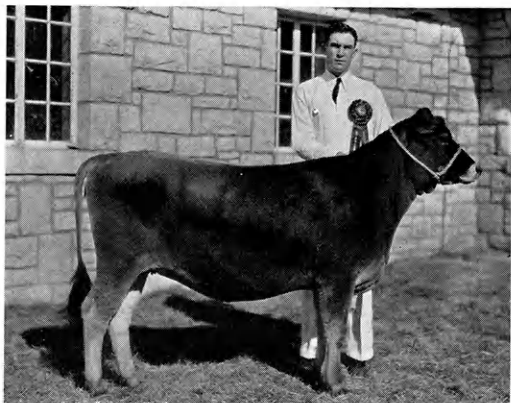
The 1936 show was bigger and better than any preceding show. In the animal husbandry division, ten classes were shown with a total of 44 animals. In the dairy division, eight classes with 31 animals were shown. Practically all the animals were well fitted and well shown. This was in spite of adverse weather from the day the animals were drawn by the entrants, January 18, 1936, to within 24 hours before the contest was held. The weather break the entrants got for the day of the show



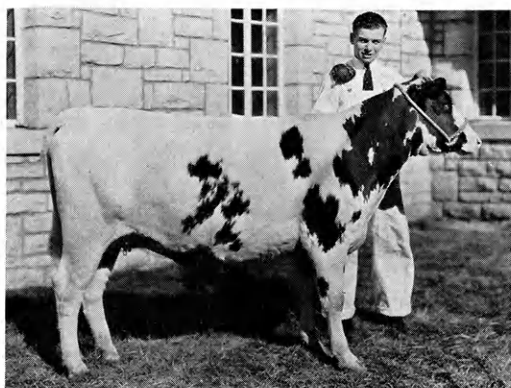
William G. Alsop and the Hereford steer with which he won the championship in the beef cattle classes.

judging was completed in the judging arena the animals were brought to the north side and presented to the crowd seated there who could not see the judging as it was being done.

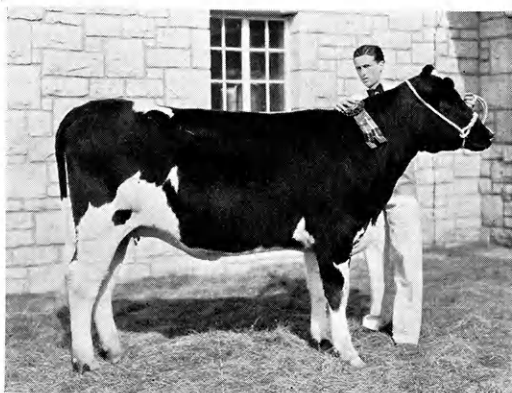
Exceptionally fine work was done by the showmen of the heifer classes in the dairy division. In fact, so uniform



F. B. Smith and the Jersey heifer with which he won the championship of the Jersey classes. (See cover page.)



Hugh H. Gillespie and the Ayrshire heifer with which he won the championship of the Ayrshire classes. (See cover page.)



Elmer A. Dawdy and the Holstein heifer with which he won the championship of the Holstein classes. (See cover page.)

and high class was their work this year that each of the breed championship classes in the dairy division was won by a heifer.

The prize ribbons were provided by the Division of College Extension. The trophies were awarded by the American Royal Livestock Show and the Kansas City Stockyards Company. The official judge in the animal husbandry division was A. M. (Andy) Paterson, assistant secretary of the American Royal Livestock Show of Kansas City. Mr. Paterson has officiated in all but one of these annual contests. He was formerly a member of the faculty of the Department of Animal Husbandry. Those assisting him with the judging were the herdsmen and grooms of the livestock herds of the college. They were as follows: Sam Bigham, horses; Tom Dean, sheep; Tom Greer, beef cattle; and W. W. Bales, hogs. The official judge in the dairy division was Prof. D. M. Seath, extension dairyman of the college. He was assisted by C. O. Bigford, college dairy herdsmen.

The master of ceremonies was David A. Reid, Manhattan, secretary of the Agricultural Association. Philip W. Ljungdahl, Menlo, president of the Block and Bridle Club, announced the classes in the animal husbandry section, and Emory L. Morgan, Ottawa, president of the Dairy Club, announced the classes in the dairy division. Master David O. Mackintosh, Manhattan, was the official bugler. All committees for the evening's program did their work in a commendable way.

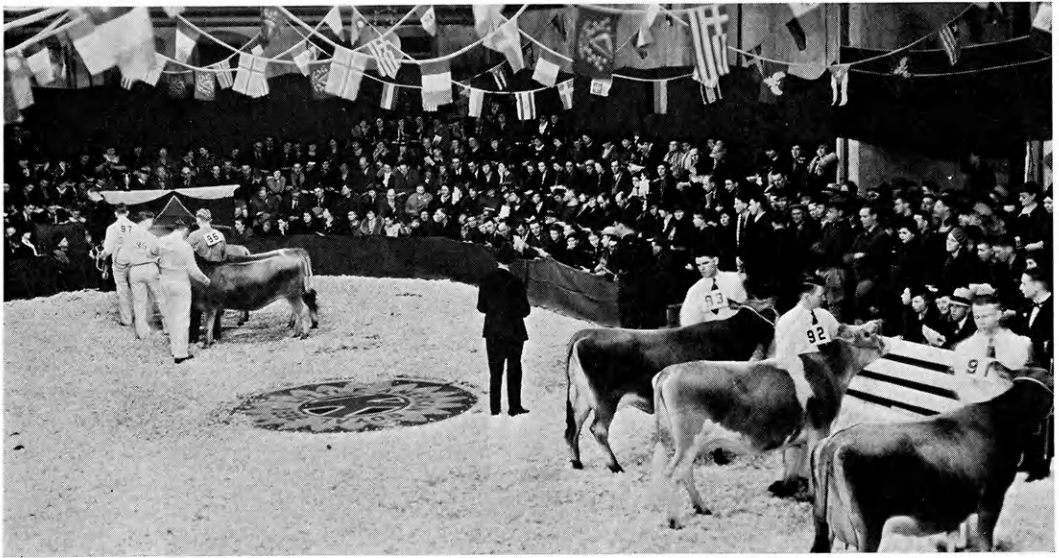
A definite time schedule was provided in the program and the showings were made with a variance of scarcely more than a minute any place from this schedule. At 10 p. m. the show was officially ended by the bugler. Contestants at once headed for the meats laboratory where the usual lunch held after the show for the participants satisfied their appetites. The preparation and serving of refreshments were in charge of Lawrence G. Harmon, Clare

R. Porter, and J. Clayton Buster. After refreshments a few short informal talks closed the program for the showmen and their helpers.

The Little American Royal is recognized as one of the big events of Farm and Home Week. The beginnings of this event were the livestock and dairy shows of 1924 to 1927. In 1928 the show was changed to a contest in ability to fit and train animals for the show ring

Junior Judging Team Wins at Fort Worth

The Kansas State College junior livestock judging team won first place in a field of eleven teams in the inter-collegiate livestock judging contest held in connection with the Southwestern Exposition and Fat Stock Show at Fort Worth, Tex., on March 14, 1936.



SCENE AT THE LITTLE AMERICAN ROYAL

At the left is the class of four Jersey heifers and at the right, the class of three Jersey cows. The speaker's stand is just back of the heifer class.

and was sponsored and managed by the Departments of Animal Husbandry and Dairy Husbandry and the Dairy and Block and Bridle Clubs. In 1935 the contest became a divisional activity sponsored by the Agricultural Association with the cooperation of the Dairy Club and the Block and Bridle Club and the departments concerned.—Philip W. Ljungdahl, '36, and Emory L. Morgan, '36.

D. B. Ibach, '23, is extension agricultural economist in the University of Missouri, Columbia, Mo.

Members of the team were Clarence L. Bell, McDonald; Roy H. Freeland, Effingham; James A. McMurtry, Clarendon, Tex.; Thomas M. Potter, Peabody; Wilton B. Thomas, Clay Center; and Burris E. Miles, Cunningham, alternate. The team was coached by Prof. F. W. Bell of the Department of Animal Husbandry.

The Kansas team scored 4,596 points out of a possible 5,000, to lead the second-place Nebraska team by 74 points. Teams in the contest and their scores were:

	Score
Kansas State College	4,596
University of Nebraska	4,522
A. & M. College of Texas	4,516
Texas Technological College	4,489
Oklahoma A. & M. College	4,476
University of Missouri	4,374
Panhandle A. & M. College	4,325
Southwestern Louisiana Institute	4,260
University of Arizona	4,246
Louisiana State University	4,223
New Mexico College of Agriculture	4,106

The high men in the contest were:

	Score
Norman Wertkamp, Nebraska	929
Clarence L. Bell, Kansas	927
James A. McMurtry, Kansas	922
Floyd Carroll, Nebraska	922
John Mayford, A. & M. of Texas	921
Wilton B. Thomas, Kansas	921
Raymond King, Texas Tech.	919
Loyal Cormon, Nebraska	919
Thomas M. Potter, Kansas	915
Brunson Wright, S. W. La. Inst.	912
Roy H. Freeland, Kansas	911

In addition to winning the plaque for high team in the entire contest, the Kansas team won two of the four trophies offered for the high team on each kind of livestock, placing first on beef cattle and first on hogs. The team was third in judging horses and mules, and third in judging sheep. Texas Tech. was first on horses and mules and A. & M. of Texas was first on sheep.

Members of the Kansas team also won four of the seven individual medals offered. Clarence L. Bell received a medal for being second in the contest and one for being high on cattle. James A. McMurtry received a medal for being third in the contest and Thomas M. Potter one for being high on sheep. Potter scored a perfect score in sheep judging.

Individual placings of members of the Kansas team on different kinds of stock were: Hogs—Clarence L. Bell, first; Wilton B. Thomas, third; and James A. McMurtry, fourth. Beef cattle—James A. McMurtry, second; Wilton B. Thomas, third. Sheep—Thomas M. Potter, first. Horses and mules—Roy H. Freeland, tenth.

In addition to the judging work at the Fort Worth show the team did considerable practice work on the way to the contest. A good workout was held at the Hans Regier Shorthorn farm south of Peabody, Kan., and another at the C. B. Team horse and mule barns

in Wichita. The second and third days of the trip were spent at the Oklahoma A. & M. College barns at Stillwater, Okla. All of the members of the team enjoyed the trip and felt that it was a week well spent, and all are looking forward to trying out for the senior team next fall.—W. B. T., '37.

Results of Garden City Lamb-Feeding Experiments

On February 29, 1936, lamb feeders of western Kansas and eastern Colorado gathered at the Agricultural Experiment Station at Garden City, Kan., to attend the third annual Lamb Feeders' day held at that station. Two hundred and sixty lambs that were being experimentally fed on various rations were available for the feeders' inspection and the results of the various tests of the experiment which closed on this date were disclosed and distributed.

For three years the Garden City station and the Department of Animal Husbandry of K. S. C. have cooperated in conducting at Garden City lamb-feeding tests of practical value to western feeders. Most of the tests have dealt with the type of feeds common to high plains and irrigated valley regions.

One of the tests reported at the recent meeting was a comparison of threshed milo grain with a combination of equal parts of dried sugar-beet pulp and milo grain as lamb-fattening concentrates. Cottonseed meal was fed to the lambs receiving each of the above feeds and ground milo fodder and alfalfa made up the roughage allowance in each case. It was found that the use of dried beet pulp to replace approximately 50 percent of the grain fed increased the rate of gains, and with this year's feed prices prevailing, lowered the cost of gains. There has been sufficient investigation of beet pulp to indicate quite clearly that when it can be bought for a price per pound

equal to or lower than the price of grain, it will lower the feed cost of producing gains on fattening lambs. This fact is of importance to feeders who are in the vicinity of a beet-sugar factory. Hundreds of tons of dried beet pulp are shipped out of Kansas annually because feeders are not generally familiar with its value. All of it could be profitably used near where it is produced.

more than offset by the ease with which wheatland milo can be harvested.

Alfalfa fed alone as roughage proved to be a little more efficient in producing gains than ground milo fodder and alfalfa combined or ground sumac fodder and alfalfa. However, these fodders fed to the extent of approximately three-fourths of the roughage allowance, produced very satisfactory gains and finish on lambs, and may usually



THE FORT WORTH JUNIOR LIVESTOCK JUDGING TEAM

Left to right: Front row—James A. McMurtry, Thomas M. Potter, Burris E. Miles, Roy H. Freeland. Second row—Prof. F. W. Bell, coach, Clarence L. Bell, Wilton E. Thomas.

Another test of interest to many is that of dwarf yellow milo and wheatland milo as grain for fattening lambs. Growers in a wide area of the Southwest have been increasing their acreage of wheatland milo, largely because of its adaptability to harvesting with the combine. This test showed that dwarf yellow milo was slightly more efficient as a gain producer than wheatland milo. However, the difference between the two was small, and might be

be expected to lower feed costs. Many plains and upland farmers produce little or no alfalfa but do produce abundant roughages such as the sorghum fodders. This and previous experiments prove conclusively that farmers in the grain sorghum growing regions can feed lambs profitably whether they have alfalfa or not. If no alfalfa is fed, one fourth of an ounce of finely-ground limestone per lamb daily should be fed.

(Continued on page 88)

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LITTLE AMERICAN ROYAL

Interest in the Little American Royal is becoming greater each year. In fact so worth while and popular is the show that the size of the audience is limited only by the space available. An audience of two or even three thousand or more could easily be assembled if they could be accommodated.

In view of this situation the possibility of assembling the animals in a tent outside the pavilion and using both sides of the pavilion for showing is being investigated. Such a plan is probably the only feasible one for some expansion in the near future.

The managers and showmen in the 1936 show put on an excellent program. The Kansas Agricultural Student is glad to list the winners and present photographs of not only the four champions in each division (including, of course, the two grand champions) but also a group photograph of all the blue ribbon men, or the winners of the 18 classes which made up the entire show. Each of these 17 men (one contestant won two blue ribbons) is to be congratulated.

JUNIOR LIVESTOCK JUDGES

Competition, intense but thoroughly sportsmanlike, is characteristic of the juniors in livestock judging. Each one realizes the mettle and ability it is going to take to win a place on the senior team next fall. Not only must some members of the junior teams be eliminated but still others from the group, keen and capable, may win places.

AGRICULTURAL ENROLLMENT, 1936-'37

Undergraduate enrollment in agricultural curricula during 1935-'36 passed the 500 mark. To be exact, it was 560 for both semesters, an increase of 25 percent over last year. Each semester had an enrollment of almost 500. Each spring the question is how many students will the next year bring. It is safe to say that our students now figure next year's enrollment will show another increase. Probably the increase won't be so much as 25 percent but a smaller and conservative estimate would step the number of our beginning freshmen from 175 in September, 1935, to 200 in September, 1936.

Ag Student Staff Discuss Work of Students of Agriculture in K. S. C.

AN INTERVIEW WITH PROSPECTIVE STUDENTS OF AGRICULTURE

In Which John, Bill, Ray, Eb, Bob, Walter,
and Elon, Kansas High School Boys,
Present Their College Problems
to the Staff

Murphy. Vocational Guidance is one phase of the work of this convention to which you boys have come. You are in this conference room because you are interested in farming or some phase of agricultural work. You are especially seeking the low down on work in agriculture in your own Kansas State College in Manhattan. I feel I'd soon be cornered if I were expected to answer all your questions. But with the other members of the staff of The Kansas Agricultural Student as my supporters I am bold to invite you to start your questioning. We'll not guarantee to answer every question to the satisfaction of the questioner, but we will guarantee to give every question a frank and honest tussle.

Now we're acquainted, boys, just as if we'd known each other for years. Let's talk freely without any timidity or reservation. I am sure we can get right down to brass tacks so as to accomplish something in the time allowed.

By the way we have here on these cards sixteen pictures of classroom work, pictures that were taken recently in K. S. C. classrooms. For convenience they are labeled A to P. They were taken by our college photographer, Mr. F. J. Hanna. They are good pictures and you'll be interested in them. If they suggest any questions, we will be glad to hear them.

Some of you have visited K. S. C. Elon was in the state high school vocational agriculture judging contest last spring. Bill flew to Manhattan over

the flood waters for the 4-H Club Round-Up last June. I know some others have been there. But none of you ever saw much of the work presented in these pictures, because for obvious reasons visitors don't see much of actual classroom work. Now, boys, we are ready for your questions.

Elon. Did you say you had a college photographer?

Murphy. Yes, indeed, we have a college photographer, a regular member of the college faculty. He takes pictures galore of students, students winning honors, student activities, extension activities, various phases of research projects, and buildings and scenes of interest in publicity. And, mind you, the agricultural work of the college gets its full share of the pictures.

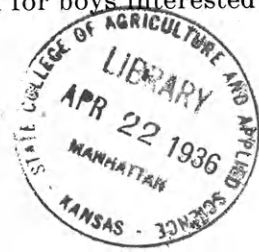
Bill. Do the students in agriculture enter freely into college activities?

Ausherman. Yes sir. K. S. C. is noted for its democratic spirit and for the generous cooperation and confidence among divisions. Our boys enter in oratory, debate, dramatics, athletics, etc., and do their share on par with all others. Ability only determines their placing. In picture (A), (1) is Joseph Zitnik and (2) is Robert W. Kirk, both varsity football players.

Eb. If a little undecided as to what you wanted, would you enroll in a general course for the first year?

Brown. As a rule, no. All first assignments in K. S. C. are quite general. If you have an inclination to enroll in agriculture, do so. You have nothing to lose and probably will gain by enrolling at once in agriculture.

Ray. I'm more interested in livestock than anything else. Don't they offer tiptop work for boys interested in livestock?



Bell. They surely do. The college has a good Department of Animal Husbandry.

Ray. Does Professor Bell still coach the **judging teams**?

Bell. Yes, that is Professor Bell (3) in picture (A) and (1) in picture (I). (A) is a picture of the advanced livestock judging class. It was taken about a week before a team from this class went to Fort Worth, Tex., where they competed with ten college teams and won the judging contest held in connection with the fat stock show there. Students given the number (4) in this picture (A) composed this team.

Ray. Do the judging teams enter several contests?

Bell. Yes, Ray, this year a junior team went to Denver where they placed second. Look at the picture of that chap on the Fort Worth team whose number is in a circle. That is Roy Freeland who is just about such a chap as you are, though older. He was a member of the Denver team and was high individual in that contest. There were only four others that made the trip to Denver. They are given the number (5) in the picture.

Ray. Tell me a little more about this boy Freeland, who seemed to make two trips to the others' one.

Bell. Yes, I know a lot about Roy. Before he came to college he raised purebred Duroc hogs and he raised the kind that placed high at the state fairs. Roy decided he must have a college education so he came to Kansas State and is working for most of his necessary expenses. Like many others of the hard-working boys at K. S. C., he has the ability and the determination to make good.

Ray. What are some other good livestock courses?

Bell. There are so many good courses in the Department of Animal Husbandry that no one student could take all of them. I can't attempt to mention but a few. Several production courses

in livestock production are very popular. Several meats courses taught by Prof. D. L. Mackintosh deserve special mention. Courses in genetics, livestock feeding, and breeding purebred livestock are among the best.

Ray. What do students do in a **meats** course?

Bell. The course is really a practical course in butchering various kinds of livestock and caring for the various kinds of meats. Students learn the reasons for curing, the best methods of curing, and get some training in **meat judging**. Kansas State has a meat judging team each year and our teams have been consistently high in the various contests. Are you thinking of coming to school next year, Ray?

Ray. Well I don't know. I really won't have much money and besides I don't know just what I would want to do when I got through.

Bell. That's all right. It is hard to find a college where necessary expenses are less than in K. S. C. Many of the boys earn a substantial portion of their way. As for knowing what you want to do, the first year is the same for all agricultural students and by the time you are a sophomore you will have a better idea of what you would like to do.

Ray. Just what kind of a job can a person interested in livestock get when he is through school?

Bell. There are numerous fields. Many of the animal husbandry men go into county agricultural agent work. Some go out and farm for themselves and this group includes many of the state's outstanding livestock breeders. By taking a little extra work they can teach vocational agriculture. If you aren't attracted by any of these there is always a chance for the good students to get assistantships and fit themselves for research workers or college teachers.

Ray. I believe I would like to go.

Bell. Surely you would and I would like to see you working in a class like

the one in that picture (I). Two freshman judging classes were posed for this picture. Each class was working on two college horses.

Ray. Bell, you mentioned teaching and that interests me. In our high school we have about the best teacher of vocational agriculture that ever taught boys to groom a gas engine, raise hogs, and do any other farm job, as well as how to become real men. He is a K. S. C. graduate.

Bell. That is the way we like to hear you talk about our alumni. Brown, you're our would-be high school teacher, tell Ray and the group something about preparation for teaching in the Division of Agriculture.

Brown. I'll try, Bell. Most of the students of agriculture who think of becoming high school teachers prepare to teach **vocational agriculture**. K. S. C. is the only institution in Kansas fitted to prepare students to teach vocational agriculture. Ray has already told you how one of our grads filled the bill. That fellow was the right kind of a lad to begin with and he had the right kind of training. We have some of the finest boys that are reared on Kansas farms. When such a boy wants to prepare to teach vocational agriculture K. S. C. can help him to become a real teacher.

Eb. What happened to John Smith who went to Kansas State from my home town in 1924?

Wenger. Oh! John Smith—why John enrolled in agriculture at Kansas State in the fall of 1924 and it wasn't long until he fully decided to **major in agronomy**. He began with the fundamentals. He took soils just as the sophomores in picture (B) are doing and then farm crops as those in picture (C) are doing. Prof. C. D. Davis (C-1), the professor of farm crops, noticed that John was a good student and seemed very much interested in this kind of work, so one day he called John into his office to talk

to him. He asked him if he would be interested in working in the department and John said, "Yes, in fact if I don't get some kind of work I'll just have to drop out of school." Professor Davis knew that Dr. Parker, the plant breeder at the college, was looking for a student to work for him so he told John to go see Dr. Parker. Dr. Parker liked John's looks, knew he had a good record both in high school and as a college freshman, and decided to give him a trial.

From that time on John worked hard, studied hard, and made his way through college with very good grades. He graduated with the class in 1928 and was considered one of the most eligible men in line for several jobs; namely, county agricultural agent, agronomist in soil conservation, grain supervision work, plant breeding work in a commercial company, or a fellowship in plant breeding in another college.

Eb. Well John certainly was doing fine up until this time, which job did he finally select?

Wenger. He finally decided to accept a fellowship in the University of Minnesota, where he could continue the work he liked so well. At Minnesota he made good just as he did at Kansas State and in two years time he received his master's degree from there. He accepted a position with the United States Department of Agriculture as agronomist. From that time until now he has been advancing rapidly and now holds a responsible position.

Eb. Is everyone as lucky as John and is crops the main line of work in agronomy?

Wenger. No, of course everyone is not so fortunate as John was but many students do get jobs and work their way through college. If they major in either **soils or crops** the chances are that they will receive employment. During the last 40 years the agronomy department has turned out men of high caliber and their services have always

been in demand. Many students have returned to the farm where most of them are making good and are happy that they have had the college training and friendships that were established while in K. S. C.

Bob. I can't exactly see what those fellows are doing but it looks as if they are cutting up **frying chickens** with the feathers still on (G).

Gregory. Well they are cutting chickens up, but I seriously doubt if they intend to fry them. I wonder if you have ever heard of a post mortem.

Bob. Yes I have and I believe it has something to do with a person after death, but in what way I don't exactly know.

Gregory. You are on the right track, Bob, but to be a little more specific I would say a post mortem is an after-death examination of either a person or an animal. The boys in the picture have killed chickens which had some ailment and they are examining the dead birds to find just what the disease or trouble is.

Bob. Is that a class in poultry diseases?

Gregory. No, Bill, it is a picture of a class in Farm Poultry Production, and the disease examination is just one phase of the course.

Bob. What other things are taught in that course?

Gregory. In general just about all things that a poultryman will come up against on the average general farm. A fellow does not get very much detail about any one thing but rather a general account of housing, feeding, incubation, brooding, culling, etc.

Bob. That does sound like a good course, but how about **poultry judging**? That is what I am very much interested in.

Gregory. Just look at that picture (F), Bob, the one in which several boys are standing around poultry cages.

That is a picture of this year's judging class. In the picture they are looking over several exhibition classes with the intent of picking out the best birds in regard to form and type. Birds are also judged for egg production in that course. You have probably heard that the poultry judging teams from this college always do mighty well, haven't you Bob?

Bob. Yes, I guess that is rather common knowledge.

Gregory. There are several reasons for having a reputation like that. One of the biggest reasons is that Prof. H. M. Scott (F-1) is the coach of the poultry team. The judging classes always have a wide variety of birds to work on. This is another asset.

Bob. Where do the birds come from?

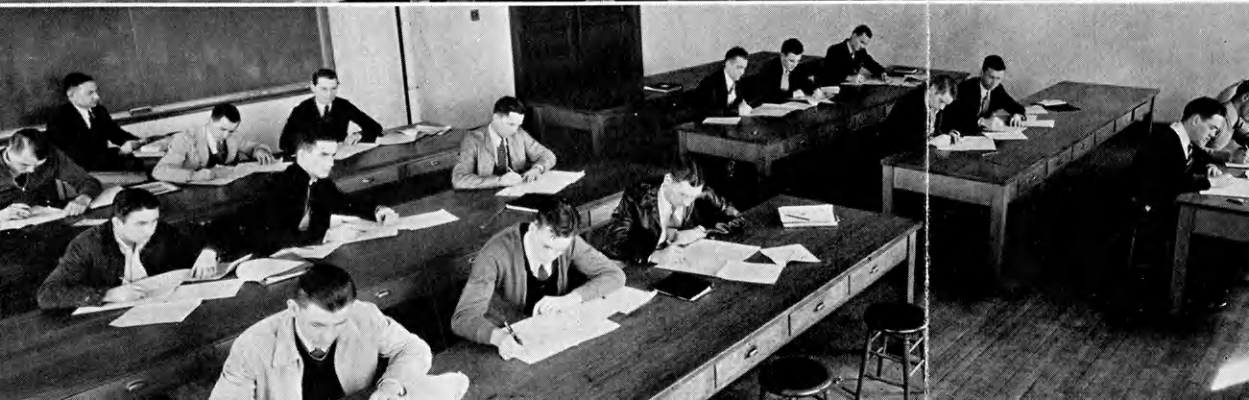
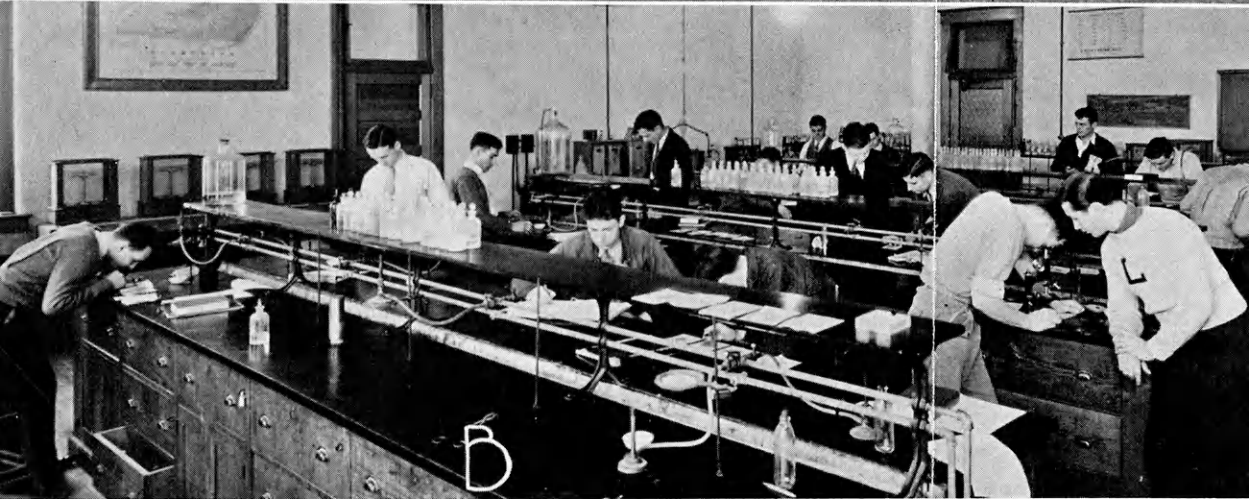
Gregory. They are owned by the college and come from the college poultry farm just north of the campus.

Bob. How many birds do they have up there?

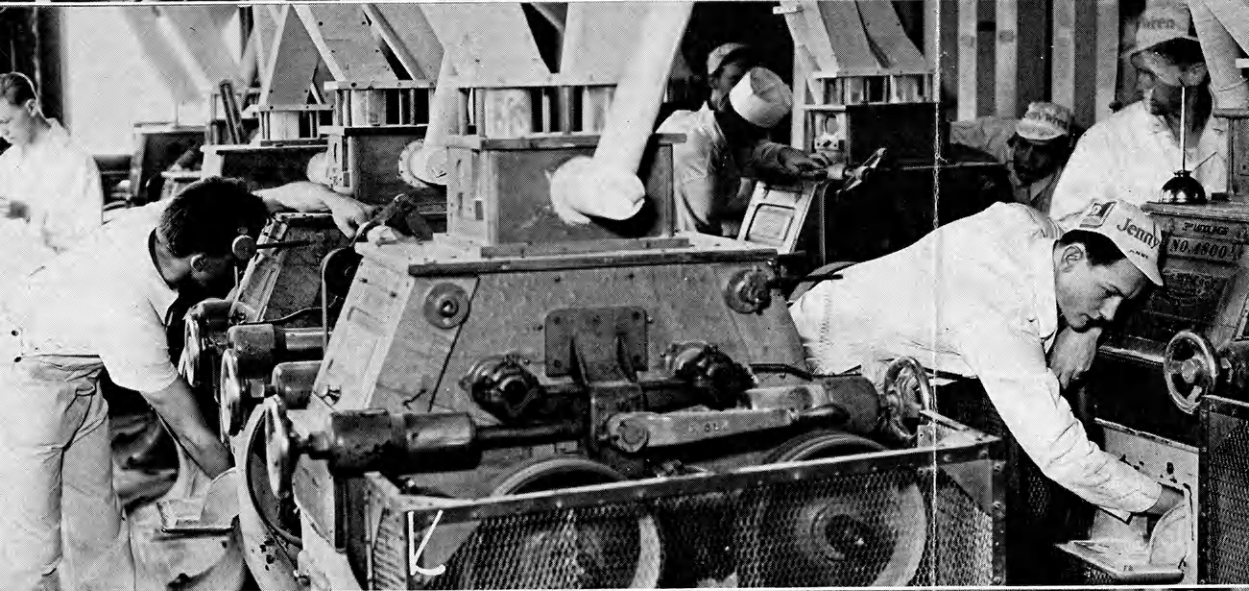
Gregory. That is a tough question, Bob, but I would say about 1,500. They hatch at different times of the year for experimental purposes; their biggest hatches come off in the spring. Why don't you go up and see the farm, Bob? It includes 24 acres, has many different types of buildings on it, and includes turkeys and guineas as well as chickens.

Bob. I will, but I wish you would tell me whether or not a fellow can get lined up in anything worth while after graduation if he should major in poultry husbandry.

Gregory. At present the Department of Poultry Husbandry cannot fill the demand for graduates in that phase of agriculture. There are opportunities available in numerous lines such as with feed companies, packing plants, hatcheries, poultry equipment companies, and with commercial poultry farms. Graduates are also in demand for research work, teaching, and some-









times fellowships and scholarships are available. Besides those mentioned there are opportunities in poultry disease work, genetics, nutrition, and other specialized lines.

Bill. Say Smittle, how much **butter** is made at one time in a churn like that? (H)

Smittle. That churn is built to handle 1,000 pounds at each churning but it is seldom filled to capacity.

Bill. Where does the college get all the cream to make butter from?

Smittle. A large portion of it comes from the milk which is produced by the college dairy herd and milk purchased from regular patrons who bring in milk each day. Sometimes cream is bought from commercial cream stations or creameries.

Bill. Are all the college **dairy cows** of the Ayrshire breed? (E)

Smittle. No, the college dairy herd is made up of the four major dairy breeds: Holstein, Ayrshire, Guernsey, and Jersey.

Bill. How many cows do they have and who takes care of them?

Smittle. Counting heifers and calves the herd numbers around 150 head. As for taking care of the cows, the college employs a number of men who feed and care for the cows as well as farm the 160 acres allotted to the dairy department for growing feed. The actual milking of the cows is done primarily by students who are working at least part of their way through college.

Bill. Yes, but I'd like to ask another question about this picture (H). Who is this fellow? (H-1)

Smittle. That is Prof. W. H. Martin, who is in charge of the dairy manufacturing work in the department and the coach of the dairy products judging teams. These teams are chosen from the group that comes out for practice each year and represents Kansas State College in the national judging contest.

Next year the team will go to Atlanta, Ga.

Bill. Smittle, Walter here would like to know what else is made in the creamery besides butter, but he is too bashful to ask.

Smittle. Oh, they make ice cream, condensed milk, cheese, and sell bottled sweet cream and whole milk.

Bill. What is that fellow doing over there with the scales? (H-2)

Smittle. He is weighing a sample of butter to make an analysis. You see the federal government has regulations which limit the amount of water that can be worked into butter.

Bill. What kind of work do the men who **major in dairying** do when they graduate from college?

Smittle. That is rather a large question. I will try to answer in part. First, the men who major in dairy manufacturing generally go into work in commercial creameries, cheese factories, ice cream factories, condenseries, and market milk plants. Some go into city or state inspection work. Second, men who major in dairy production find jobs such as managers of large dairy herds, operators of dairy farms of their own, county agricultural agents, or other college extension workers. Third, there are a few men who go ahead with graduate work and later take college positions as teachers or research men in dairy husbandry.

John. You know, I believe I would like to be a miller. Is there much of a future after graduation?

Finney. Well, John, the fact that the milling industry is one of the major manufacturing industries in the United States and the second largest in Kansas is indeed encouraging to the student who is really interested in milling.

John. Is it better to learn milling by going to college, Finney?

Finney. Milling is becoming scientific. As a result, the only logical place

to acquire a scientific training would be in an institution specializing in the teaching of milling. Kansas State College is the only college or university in the western hemisphere offering a curriculum in milling industry.

John. Is it a practical curriculum?

Finney. Yes, it is. But the curriculum in milling industry is not at all lacking in the essentials in English, the sciences, and mathematics which are necessary in developing the student's ability to think for himself as well as giving him a background for more advanced work.

John. Does the student specialize only in the so-called milling of wheat?

Finney. Not at all, John. It depends, however, on what phase of work in the milling industry you expect to pursue after leaving college as to which of the three major lines of milling work you pursue as a student. If you expect to manage a flour mill you should major in milling administration (or the buying and selling of wheat and flour). If you expect to be a milling superintendent or look after flour production, your major should be in milling technology (or the processing of wheat). Picture (L) shows a beginners' class learning the first steps in milling after which students study milling processes (K) as they actually take place in a commercial mill. If, however, you intend to be a flour mill or cereal chemist, your major should be milling chemistry (or the testing of wheat and products). The class in baking (J) shows students learning one of the methods of testing.

John. Gee, that is interesting! Will you tell me more in detail what is being done in the pictures?

Finney. I will be glad to, John. In picture (J) students are shown during a baking class. The various operations shown are: Weighing out the flour and other ingredients for the dough, mixing in a mechanical mixer, molding and folding the dough for the loaf,

measuring the volume of the baked loaf, and finally cutting and judging the quality of the baked loaf.

In picture (L) students are studying the grindings and separations involved in flour milling by making all transfers between the different operations by hand. In this way the student has an opportunity to study what is done to the wheat or mill products in all the different steps involved in the manufacture of flour. This course lays the foundation for the advanced work on the larger mill as shown in picture (K).

In picture (K) students are shown studying flour milling processes in the only complete flour mill owned by a college or university in the western hemisphere. This 65-barrel mill is located in the east agricultural building. This picture was taken on the roll floor where the wheat is subjected to a series of grindings after which it is sifted and purified. This process is repeated several times until the wheat is separated into pure white flour and feed.

John. Thanks a lot, Finney. That course in milling industry is right in my line.

Elon. What do you mean when you say you are majoring in **agricultural economics**?

Miller. You mean you spend more time studying marketing, farm organization, and other courses in farm economics than students do who are not majoring in agricultural economics. All students take similar basic courses in agriculture and related sciences.

Elon. **Marketing**—how much really practical knowledge do you get out of that course? Just for example would I learn how to figure out the best time to sell wheat?

Miller. That's the idea. Men have been working on that for years, and they can give you some valuable information, not only on wheat marketing, but also on marketing of cattle, hogs, and dairy products. You learn

the general principles of marketing in one basic course, but if you are especially interested in wheat, you would take grain marketing, too.

Elon. My dad usually sells his wheat at the right time, but we never have enough livestock to keep things going until the next crop.

Miller. You can solve that problem in the Department of Agricultural Economics, too. The boys you see in the picture (M)—the class in farm organization—are working with actual figures on the cost of operation and the income of the farm business. They study results from actual farms and then suggest methods the farmer could use to make more money.

Elon. That's something I'd like to know myself. But I wouldn't like to do all the work on paper.

Miller. You wouldn't have to. The advanced farm organization students go out and visit a few of the best farms around Manhattan, and try to discover the good and bad points in each man's operations. The picture on page 86 shows this class on the farm of W. P. Dodge about three miles northwest of Manhattan. They are studying the quality of his dairy cattle. This class also makes a week's trip each spring and studies carefully the organization of at least a dozen good farms of various types they can reach in that time.

The boys you see in picture (D)—the class in **farm cost accounting**—are learning the best method of keeping farm records so they will be able to check up on their own farms.

Elon. That's a good idea, but sometimes when you check up you find you're in a tight spot and need some money. My dad sometimes has to borrow money to run us until we sell our cattle. Just what does a good business man do then?

Miller. The subject of when and where to borrow money is well covered in **agricultural finance**. This course comes in the general field of land eco-

nomics, which is another important part of the work in agricultural economics. Besides agricultural finance, the field of land economics includes the study of taxation and deals also with land problems such as what is to be done with our dust bowl.

Walter. My father has an apple orchard. Would I be able to learn how to grow apples at Kansas State?

Ramsbottom. The **Department of Horticulture** has just what you want. They offer courses that teach you what varieties are best and just how to care for them.

Walter. But what I want is practical experience.

Ramsbottom. The department has an orchard in which the students receive actual experience of pruning, spraying, and caring for fruit trees. It is the purpose of this department to give the general principles of fruit growing that they might be applicable in any part of the country.

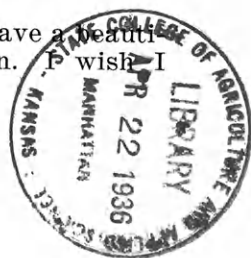
Walter. Were those apples in picture (N) grown in the college orchard?

Ramsbottom. Yes they were, Walter. This class you see in the picture is one of advanced pomology. Dr. Filingner (N-1) is teaching the boys how to pack apples.

Walter. Gee, it takes a lot of money to set up an orchard. Not all of those fellows will be able to do that, will they?

Ramsbottom. That's right, Walter, but the students who are not so fortunate and are not able to have an orchard of their own have been trained so broadly in the horticultural field that they are able to enter into other related lines. Some students go into commercial lines of work, while others may take up forestry or even nursery work.

Walter. You certainly have a beautiful campus at Manhattan. I wish I



knew how to grow trees and shrubs like that.

Ramsbottom. If you specialize in **landscape gardening** you get four years of just that sort of training.

Walter. I'll bet that is very interesting work.

Ramsbottom. That's right, the curriculum is planned to give one who is interested a very general knowledge of the field. The training includes the engineering features, the knowledge of plant materials, and architectural structures. Those so trained have opportunities of valuable employment in a profession that requires the talents of an artist and the practicality of a builder.

Walter. Who has charge of the landscaping courses?

Ramsbottom. Prof. L. R. Quinlan (1) in picture (O) teaches these courses. Perhaps you would be interested in knowing that Professor Quinlan received his training at Harvard University. You can get some idea of what type of work the landscape man does from the plans that hang in the background of the picture.

Walter. Those are pretty flowers in that picture (P). Could I learn to grow flowers like that?

Ramsbottom. Yes, that is another phase of horticulture. These students are "dressing" plants for sale in the college greenhouse. That is Prof. W. B. Balch (P-1). He teaches the courses in greenhouse construction and management, floral arrangement, and vegetable gardening.

Walter. It sounds to me as if all these courses would be very interesting. I am going to write for a college catalog so I can learn more about each one.

Marvin E. Vautravers, '33, is employed as hatchery manager for the Concordia Creamery Company.

Raymond T. Harper, '33, is employed by Swift and Company as manager of their hatchery at Hastings, Nebr.

Yun S. Kim, '33, is professor of agriculture in the Provincial Institute of Agriculture, Nanchang, Kiangsi, China.

R. L. von Trebra, '26, is regional director of Soil Erosion Service in Nebraska. He is located at Albion, Nebr.

F. W. ImMasche, '29, is assistant to Deputy Governor F. F. Hill in the Farm Credit Administration. His headquarters is Washington, D. C., but his field of work and travel is about nation-wide. He visited friends in Manhattan and K. S. C. last summer.



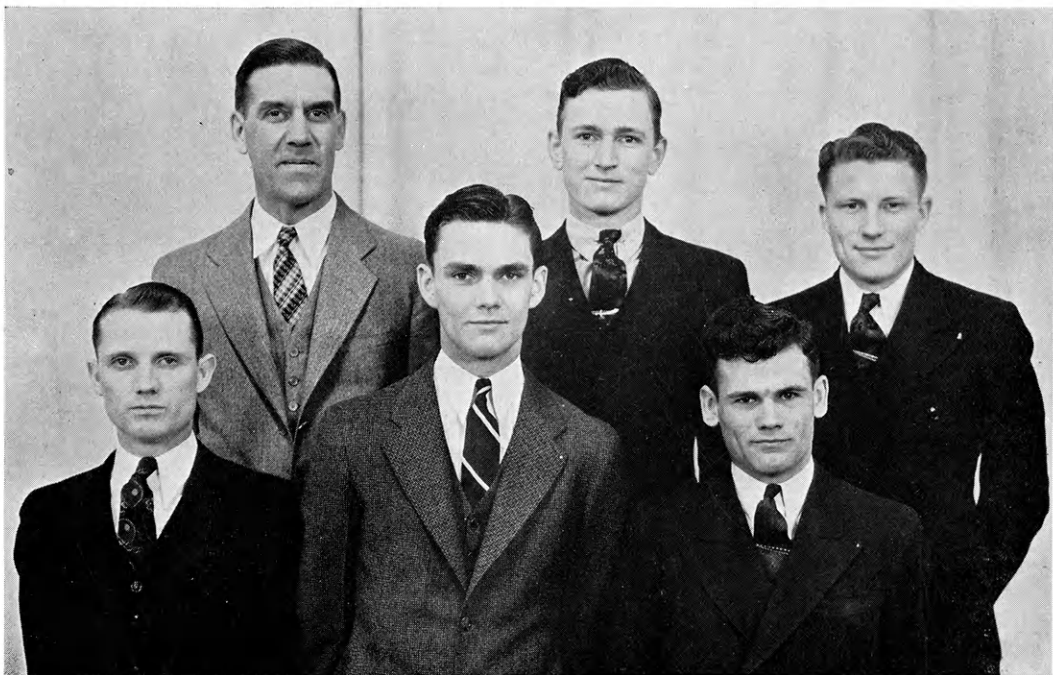
THE CLASS IN ADVANCED FARM ORGANIZATION ON AN INSPECTION TRIP
The class is shown on the farm of W. P. Dodge, a few miles northwest of Manhattan.

Junior Livestock Judging Team Makes Good Showing at Denver

The K. S. C. junior livestock judging team under the direction of Prof. F. W. Bell, coach, won second place in the intercollegiate livestock judging contest held at Denver, Colo., January 18, 1936. The members of the Kansas team were:

also ranked first in the judging of all cattle classes and tied for first in the judging of the sheep classes. They ranked second in the judging of the hog classes and third in the horse classes.

Freeland was high individual in the entire contest. His score was 741 out of a possible 800 points. Members of the winning Colorado team ranked second, third, fourth, sixth, and ninth with scores of 729, 709, 689, 687, and 683. Elling ranked fifth with a score



THE DENVER JUNIOR LIVESTOCK JUDGING TEAM

Left to right: Front row—Roy H. Freeland, Clare R. Porter, Carl M. Elling. Second row—Prof. F. W. Bell, coach, Harold J. Scanlan, Fred L. Fair.

Roy H. Freeland.....	Effingham
Fred L. Fair.....	Alden
Harold J. Scanlan.....	Abilene
Carl M. Elling.....	Manhattan
Clare R. Porter.....	Stafford

The contest consisted of the judging of five classes of market livestock and five classes of breeding livestock. The Kansas team ranked first in judging the breeding classes and second in judging the market classes. The team

of 687; Scanlan seventh with 686, Porter eighth with 683, and Fair eleventh with 677.

The four teams entered in the contest and their scores are as follows:

	Score
Colorado	3,497
Kansas	3,474
Wyoming	3,271
New Mexico	3,204

In the judging of the group of breed-

ing livestock classes, Freeland ranked first, Elling fourth, and Fair fifth, and in the judging of the market livestock classes, Porter ranked fifth and Scanlan, sixth. By placing first on the livestock classes, Freeland received a silver trophy. Freeland also placed first in the judging of all classes of sheep and cattle and third in the judging of all classes of hogs and horses. Fair ranked third in the judging of sheep classes and fourth in the cattle classes.—C. R. P., '37.

LAMB FEEDING EXPERIMENTS

(Continued from page 73)

However, the use of a small amount of alfalfa in such a ration improves it.

The phase of this year's experiment concerning which there is perhaps more general interest among feeders than any other is that in which a test was made of the lambing down of milo in the field as a method of fattening lambs. One lot of lambs was lot fed the same feeds that those in the field received. The lot-fed lambs made somewhat more gain and consumed considerably less feed than the field-fed lambs. The economy of gains produced was therefore in favor of the lot-fed lambs.

The milo used for this lambing down test was grown under irrigation and yielded approximately 65 bushels per acre. For crops with this heavy grain yield, lambing down appears to be a wasteful and expensive method of feeding and cannot be recommended. For crops of low grain yield lambing down probably has some advantages. Further experimental work is needed on this method of fattening lambs.—R. F. Cox, professor of animal husbandry.

Lewis S. Evans, '36, is doing part-time work on the weed control project under the supervision of the Bureau of Plant Industry and the Nebraska Agricultural Experiment Station. He will also take part-time graduate work in the University of Nebraska.

Farm and Home Poultry Program

The poultry program of Farm and Home week called the attention of the visiting poultrymen to the experiments conducted at Kansas State College and elsewhere. The economic aspects of the industry were also pointed out, especially those pertaining to marketing. After the formal part of the program was finished a visit was made to the college poultry farm.

Dr. D. C. Warren gave a discussion on the formation of the egg. The knowledge of egg formation, until recently, has been rather vague, and Doctor Warren told of recent experiments at Kansas State College in egg formation. Prof. E. R. Halbrook spoke on the extension poultry program carried out by the college. He gave the advantages of extension work and how these advantages may be obtained. Information is distributed through the 4-H club poultry program; by monthly news letters; and by extension bulletins and public meetings. The value of good egg storage was discussed by Prof. L. F. Payne. By keeping eggs under proper conditions he found that a profit of about \$1 per case was realized. Prof. E. R. Menefee of Purdue University talked on the cooperative shipping of eggs. He showed that all marketing functions were necessary, but that in cooperative shipping the producers perform many of the duties of the middlemen.

Another talk on cooperation was given by President Farrell entitled, "Cooperative Individualism." He contrasted rugged individualism with cooperative individualism and stated that both activities are needed in the poultry industry. He said the wide price range between production goods and consumption goods was caused by imperfections in individuals. Price was defined by Mr. H. E. Van Norman of Chicago, as "what you can get for what

you have to sell." The auction was stated to be the ideal market because in such a market the price is largely determined by the desires of the buyer and the seller. Prof. Walter G. Ward, extension architect, discussed the cost of a well-equipped poultry house. The cost of a 20' by 40' straw-loft laying house was estimated to be about \$450 or \$2.25 per hen capacity. These figures include both the labor and materials.

and W. D. Marriott of Jackson county was named as outstanding in R. O. P. work. The poultry brooding contest was won by J. F. Komarek of Saline county, and J. E. Combest of Ness county won the flock management contest. —D. W. G., '36.

H. L. Collins, '23, is agricultural statistician for Kansas with headquarters in Topeka.



POULTRY CHAMPIONS FOR 1935

Bottom row: Left to right, Mr. and Mrs. J. F. Komarek, Bavaria, brooding; Mr. and Mrs. W. D. Marriott, Mayetta, R. O. P.

Second row, Mr. and Mrs. Earl M. Cook, Dillon, Certified flock; James E. Combest, Ransom, flock management. (Mr. Bergner of Isabel, champion of Approved flocks, is not in the picture.)

Professor Ward recommended using more No. 3 lumber in poultry house construction. Carotene or provitamin A was discussed by Dr. J. S. Hughes. He stated that alfalfa was a very good source of vitamin A and that yellow corn was not half so good as bright green alfalfa meal.

Five poultry champions were named for 1935. Claus Bergner of Isabel, Pratt county, was named champion in Approved flock work; Earl M. Cook of Dickinson county merited the championship in the Certified flock group;

Kansas Rural Life Association Conference

The second annual conference of the Kansas Rural Life Association was held March 27, 28, and 29 at Kansas State College. This year's theme was "Achieving Rural Progress Through the Development of a Balanced and Enriched Personality."

The Kansas Rural Life Association is an organization of rural young people between the ages of 18 and 24 years.

It came into being in 1935 as a result of efforts of the 4-H Club department of Kansas State College in promoting the organization of such young people in their respective counties. The first state conference was in March, 1935, at which time the state organization was perfected and a plan adopted for the holding of state conferences annually.

The association, although new, has approximately 1,600 members of which 241 registered for the recent conference. There were 41 counties and three collegiate 4-H clubs represented. The collegiate 4-H clubs were from Kansas State College, K. S. T. C. of Emporia, and the Municipal University of Wichita.

Mr. Eugene Merritt, Extension Service, U. S. Department of Agriculture; Dr. E. L. Kirkpatrick, Department of Sociology, University of Wisconsin; and Mr. R. A. Waite, assistant director of the American Youth Foundation, St. Louis, Mo., were out of town speakers taking part on the program. Several faculty men of Kansas State College also appeared on the program.

Officers for the ensuing year were elected at the close of the conference. The old and new officers are as follows:

1935-'36

President—Howard A. Moreen, K. S. C.
Secretary—Marje Blythe, K. S. C.
1st Vice-President—Edna May Reynolds,
Montgomery county
2d Vice-President, Kenneth Middleton,
Johnson county.

1936-'37

President—Vernal G. L. Roth, K. S. C.
Secretary—Grace Burson, K. S. C.
1st Vice - President—Clarence Dempsey,
Leavenworth county
2d Vice-President—Ethel Avery, Riley
county

—A. C. A., '36.

Variability of Milk Prices

Results from a recent study of the prices of dairy products and dairy rations in Kansas show that the farm price of butter fat, the prices paid to farmers for fluid milk, and the price of the standard dairy ration varied a great deal during the 1930 to 1934 period as

compared with the 1925 to 1929 period, while the retail doorstep prices of milk in Kansas City, Topeka, and Wichita remained much more constant during these two periods. The greater variation of the 1930 to 1934 period is to be expected when we consider that commodity prices declined rather rapidly from 1930 to 1933 then increased from these lows until by the end of 1934 most prices were near the 1930 price level.

In periods of rising and falling commodity prices, these marked differences in the variation or flexibility of prices are very important to the milk producer. In a period during which commodity prices are working to lower levels, the retail doorstep price of milk is held up while the farm price of butter fat and the prices paid to farmers for fluid milk decline more rapidly. Thus, the farmer who produces the variable type of product would receive a smaller share of the retail price. However, during periods of rising prices the process is somewhat reversed. The more flexible prices rise more quickly and more extensively. Therefore, during periods of rising prices the wholesale milk and butter-fat producer will again receive a large portion of the consumer dollar.—O. J. R., '37.

R. W. Fort, '26, is county agricultural agent in Saline county.

C. B. Roberts, '22, is manager of a 1,500-acre farm near Oronogo, Mo.

W. J. McMillin, '27, is field man for the Farm Credit Administration, Washington, D. C.

Robert O. Blair, '32, is manager of the T. E. Mitchell and Sons ranch, Albert, N. Mex.

P. H. Hostetler, '34, is taking graduate work in the Department of Dairy Industry in Iowa State College, Ames.

A. Wallace Benson, '28, is farming about 3½ miles southwest of Clay Center. He is wintering a bunch of 40 steers on the forage his corn land produced last year.

Soils and Crops Research

Ten Experiment Fields Study Crop Problems of Special Interest Locally

The leading problems of economic importance to Kansas agriculture are being systematically and scientifically studied by the Kansas Agricultural Experiment Station. In the main these problems may be classified in three groups: (1) Problems of farm economics. (2) Problems pertaining to the livestock industry. (3) Problems in crop production and crop products. All the work is directed and coordinated and the results in the main given publicity from the central station in Manhattan. The chief studies of livestock problems are carried on at Manhattan, but an important phase of that work is regularly conducted at the Fort Hays branch station and in a more limited way at the Colby and Garden City stations. Crops problems are not only studied at the central station and each of the four branch stations, but on ten experiment fields located in various parts of the state as illustrated by the accompanying map and a brief discussion of the work of which is presented in this article.

For the study of these agricultural problems the state owns and operates farms at the central station at Manhattan and each of the branch stations at Hays, Colby, Garden City, and Tribune. A little over 1,000 acres are included in the Manhattan farm, approximately 4,000 acres at Hays, 320 acres each at Colby and Garden City, and 110 acres at Tribune. The experiment fields are small as hereafter indicated and are secured from their owners by short-time leases. Crop and fruit production problems of local interest constitute the chief projects for investigation on these experiment fields.—Ed.

SOUTHEASTERN KANSAS EXPERIMENT FIELDS

F. E. Davidson, '33

Five experiment fields were established in southeastern Kansas in 1924.

They were located upon five different soil types which represent all except one of the principal upland soils of that section. Soils and crops experiments were conducted upon the five fields until the fall of 1931. At that time it became necessary to abandon the Rest experiment field in Wilson county because of a reduction in the appropriation allotted for that work. Additional reductions in appropriations in 1932 and 1933 necessitated the abandonment of the Fort Scott and the Parsons experiment fields. Since 1933 the experimental work in southeastern Kansas has been confined to the Columbus and Moran experiment fields and to the cooperative experiments distributed over the area.

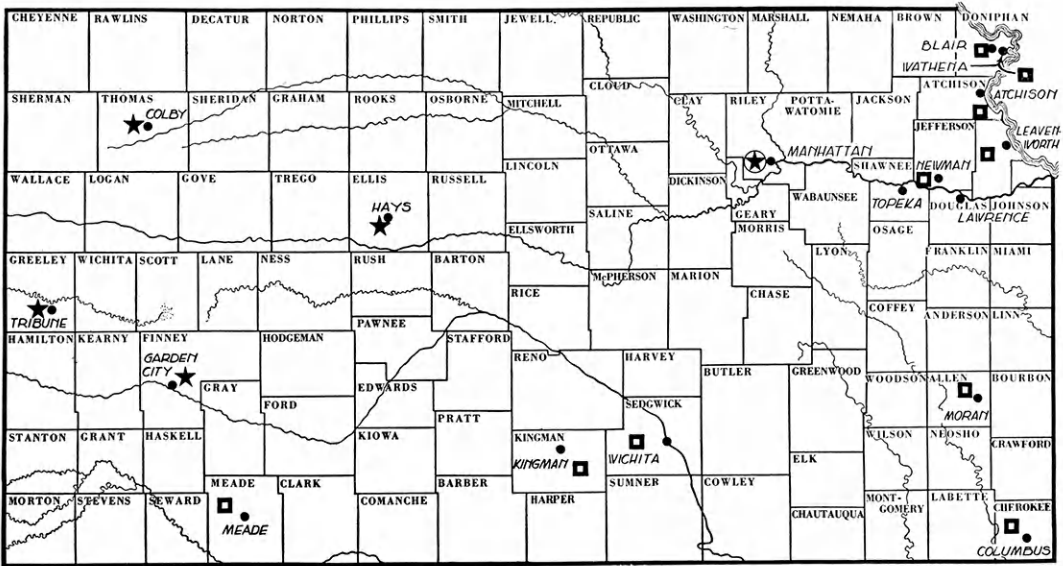
Since the chief agronomic problem in southeastern Kansas is restoration of soil fertility, a large part of the land and labor at these fields is devoted to soil fertility studies. Each field is so laid out that a five-year rotation, including an annual and a biennial legume, can be maintained. In addition to this rotation there is a group of plots devoted to studies with alfalfa. Plots of each crop are treated with lime, manure, and commercial fertilizers, alone and in combinations. Besides the soil fertility work there are experiments designed to study varieties of all farm crops grown in the area, short rotations, rate and date of seeding of the various crops, seedbed preparation, and various other problems. Records of the kinds and amounts of fertilizers, the time and method of application, the seedbed preparation, the cultivation, the crop variety, and the yield of each plot are kept. The two fields now in use are described more fully in the following paragraphs.

COLUMBUS FIELD

The Columbus experiment field is located on the farm of W. H. Shaffer and Sons, one mile west and three miles

north of Columbus. The soil is Cherokee silt loam, or what is popularly known as "white ash" land. This land is very level and generally needs surface drainage. The subsoil contains a claypan which is so tight and impervious that the surface water will not drain through it readily. Normally this soil is too acid to permit the establishment of a stand of alfalfa or sweet

a block of alfalfa. The results of this work indicate that it is essential to use lime to grow alfalfa and sweet clover, and when these legumes are used in the rotation they materially increase the yields of other crops. It is quite profitable to use phosphate on alfalfa, wheat, and oats, but not on other crops. Manure increased the yield of all crops, but no increases have been obtained



★ AGRICULTURAL EXPERIMENT STATION (CENTRAL STATION)
 ★ BRANCH AGR. EXPT. STA. □ EXPERIMENT FIELD

WHERE AGRICULTURAL RESEARCH IS CONDUCTED

Agricultural research in Kansas is carried on by the Agricultural Experiment Station, its four branch stations, and ten experiment fields. A large portion of the work is done at the central station at Manhattan, but Kansas has such a diversity of soil and crop problems that certain types of work must be adapted to local conditions. The state owns the land on which the central and branch stations are located but leases small tracts for the experiment fields.

clover. With a suitable application of ground limestone, however, both alfalfa and sweet clover can frequently be grown successfully. Alfalfa has been the most profitable crop grown.

The rotation used in the soil fertility experiments on the Columbus field is as follows: Wheat, oats with sweet clover, corn (sweet clover plowed under as green manure preceding corn), soybeans for seed, and flax each one year. The rotation is supplemented by

from the use of potash.

Besides the fertility work, there are variety tests of wheat, soybeans, alfalfa, sweet clover, and tame grass; a flax seedbed preparation test; a rate- and date-of-seeding test with flax; and various other tests of minor importance.

MORAN FIELD

The Moran experiment field is located upon the farm of R. O. and J. T. Furneaux, two miles west and two

miles north of Moran. The soil is Parsons silt loam or what is locally known as the "brown soil." The topography of this land is somewhat rolling and considerable attention must be given to erosion control. The subsoil is tight and impervious but not so much so as that of the Cherokee soil on the Columbus field. The lime has been leached from the surface soil to the extent that most of the alfalfa and clover seedlings will perish the first year unless lime is supplied. In the case of sweet clover a small amount of lime drilled with the seed enables the plants to survive the first year and get their roots established in the subsoil, after which they seem to grow with almost as much vigor as those on the more heavily limed plots.

With the application of lime or lime and phosphorus, alfalfa again becomes the most profitable crop. Corn and sorghums are well adapted to this soil, and oats and flax do quite well in rotations which include legumes. Wheat cannot compete economically with the crops mentioned above.

The rotation followed in the soil fertility experiments on the Moran field is as follows: Corn, corn, soybean for seed, oats with red clover, red clover hay each one year. This rotation is also supplemented with a block of alfalfa. The data obtained from this work indicate that when alfalfa and clovers are used in the rotations, lime returns good dividends on its cost and this is true of phosphate fertilizers and barnyard manure. Potash does not increase yields sufficiently to justify its use.

In addition to the fertility work there are on this field variety tests of alfalfa, corn, oats, flax, soybeans, sorghums, and tame grasses; a method-of-seeding soybeans test; a test including four short rotations of corn, oats, and sweet clover; and an alfalfa test upon which various combinations of different amounts of lime and phosphorus are applied.

VISITORS DAYS

Farmers are invited to visit these fields and inspect the experimental work. Field days are held each year and visitors are especially invited to attend these meetings. Further information concerning this work may be obtained at any time by writing to the Department of Agronomy, K. S. C., Manhattan, or to the writer of this article whose address is R. 3, Parsons, Kan.

SOUTH CENTRAL KANSAS EXPERIMENT FIELDS

C. E. Crews, '28

There are two south central Kansas experiment fields. The Wichita field is along U. S. highway 54, eleven miles west of Wichita on the Ten-Mile Post farm operated by M. W. Reece. The Kingman field is located along Kansas highway 14, eight miles south and two east of Kingman, on the Birkenbaugh farm operated by Claude Brand. A Pratt field was abandoned in 1933.

These fields have been in operation since 1932, but due to the abnormal climatic conditions during this time some of the results must be interpreted with reservations. In the following paragraphs is presented a brief summary of some of the most outstanding results to date.

Wheat has made slightly better yields when planted after wheat than when planted after oats or second-year sweet clover where the stubble was plowed under in June. The date-of-planting test for wheat has shown a very distinct advantage for the wheat planted between September 25 and October 10. There was not a great deal of difference in the yields of the leading standard wheat varieties. Superphosphate or sodium nitrate was not profitable on wheat except in the most favorable years for wheat. In unfavorable years the yields have been decreased. The use of potassium fertilizer has not been profitable on these fields.

Lime has about doubled the yield of

alfalfa and sweet clover on the Kingman field. The results have been favorable but not outstanding on the Wichita field. It has been found on these fields that 300 pounds per acre of finely-crushed limestone drilled in the row with the sweet clover seed produced results equal to two tons per acre applied broadcast. The light application will probably need to be used each time the land is planted to sweet clover.

Twenty-four varieties and strains of sweet clover have been tested and some outstanding differences were noted. The Madrid yellow sweet clovers as a group did very well, and one or two of the strains appeared outstanding. Fall-seeded sweet clover yields only a little more than half as much as the spring-seeded crop. The stand is as easy to obtain in the fall and it does have the advantages of occupying the ground only one year and of preventing the production of a crop of weed seed. Mowing the weeds on spring-seeded sweet clover in hot weather will frequently kill the sweet clover plants.

The most successful variety of alfalfa has been Kansas Common. Ladak, a new variety, is noticeably resistant to bacterial wilt, pea aphid injury, and leaf diseases and the first cutting has been heavier and more leafy than other varieties tested. It is very promising in this section of the state.

A thin stand of alfalfa in brome grass greatly increased the yield of both brome grass hay and seed. Brome grass is the outstanding tame grass in both yield and ability to withstand hot dry conditions. Korean lespedeza will produce only seed enough to reseed the crop and practically no forage.

It is planned to continue the tests now in progress and to expand somewhat the grass and pasture work.

NORTHEASTERN KANSAS EXPERIMENT FIELDS

Erwin Abmeyer, '33

The northeastern Kansas experiment fields were started in 1932 and

originally consisted of a potato field, a crops field, a newly planted orchard, and a bearing orchard. In 1933 arrangements were completed for a small fruits field, making a total of five fields in the northeastern Kansas group.

NEWMAN POTATO FIELD

The Newman field is located on the farm of R. Shirley, two miles west and one mile south of Newman. The area of this field was increased from 10 to 13 acres in 1933 to allow for more work on potato diseases. The major portion is used to determine the effect of crop rotations, green manure crops, size of seed piece, rate and depth of planting, and time of planting on yield. A portion is used for production of other vegetable crops, and a small area is devoted to potato varieties.

The seasons have been abnormal and the results secured are somewhat confusing, especially with regard to rotations and fertilizers. In general, commercial fertilizers have been more effective in increasing yields than green manure crops or combinations of green manure crops and fertilizers.

Some outstanding results have been secured from the size-of-seed-piece experiments and in 1935 the rate-of-planting studies. The most profitable size of seed piece has proved to be one ounce in weight. Compared with the one-ounce seed piece, the one-half-ounce piece greatly reduced the yield; the two-ounce seed piece gave a slight increase in yield, but not enough to balance the additional cost of seeding; and the three-ounce seed piece resulted in a decrease in yield. In 1935, when potatoes were planted at the rate of 8, 12, and 16 bushels per acre, the yield was directly in proportion to the amount of seed planted. The four-inch depth of planting has consistently given better results than two- or six-inch planting. When planted only two inches deep, yields are reduced and more decayed potatoes are found. When planted six inches deep yields are not increased above those from

four-inch planting, and the crop is much more expensive and difficult to dig. No new variety has been found to outyield Cobbler, but Warba shows some promise.

McLOUTH CROPS FIELD

This field is located on the farm of J. R. Tullis, fifteen miles west of Leavenworth on Kansas highway 92, and has an area of 30 acres. Studies on this field include erosion control, crop rotations, pasture management, variety tests, and fertilizer treatments.

The effect of phosphorus in increasing the yields of wheat and oats on this field is outstanding. The application of lime and phosphorus is a necessity for profitable alfalfa production.

Some of the leading varieties in regard to yield are as follows: Wheat—Kanred, Tenmarq, Blackhull, Kawvale; oats—Kanota if planted early, Fulghum x Markton if planted late; corn—Pride of Saline; alfalfa—Kansas 308, Ladak, Grimm.

Yields of Kentucky bluegrass have been increased one half by application of phosphorus and almost trebled by the application of both nitrogen and phosphorus early in the spring. Brome, reedtop, timothy, orchard grass, and perennial rye grass withstood the 1934 drought and yielded well in 1935, showing that with proper pasture management these grasses can be maintained in northeastern Kansas pastures.

ATCHISON ORCHARD

This 10-acre orchard is located 10 miles south of Atchison on U. S. highway 73 on land owned by Mat Ernzen. The trees were set in the spring of 1932 and studies to date have been limited to pruning and soil management. The varieties set were Jonathan, Winesap, Richared, and Grimes Golden apples; and Early Richmond and Montmorency cherries. Trees in straw mulch have made the most growth but the windbreak effect of corn grown between the rows has enabled the trees under this system of soil management

to hold their shape much better. Nearly all trees have made a satisfactory growth under rather adverse weather conditions.

BLAIR ORCHARD

The Blair orchard, owned by John Muench, is located one fourth of a mile west of Blair on U. S. 36. There are 430 trees in all, the varieties being Winesap, Jonathan, Delicious, and York. The major studies here are pruning and soil management. Other studies include thinning and the testing of various fungicides. The time has been too short for definite information regarding the three methods of pruning—light, medium, and heavy. On soil management, clean cultivation plus a cover crop of vetch increased the yield but retarded the coloration of fruits as compared to the sod culture. Work at this orchard has been handicapped by a light crop each year since the work was started.

WATHENA SMALL FRUITS FIELD

The Wathena field is located on land owned by the Wathena Rural High School. The area is three acres. Permission to use the ground was secured in 1933 and the field planted in 1934. The field is devoted to raspberry and strawberry experiments. Strawberry experiments include rotations, mulching, renovation, spacing of plants, and variety testing. Raspberry experiments include disease control, pruning, trellising, and maintenance of soil fertility.

SOUTHWESTERN KANSAS EXPERIMENT FIELD

A. B. Erhart, '33

There has long been a need for representative experimental facts on agricultural practices in southwestern Kansas, a part of the state heretofore not represented by an experiment field or a branch of the Agricultural Experiment Station. With this need in mind a forty-acre tract was secured on the John Hiatt farm in Meade county, nine

miles west and two and one half miles north from Meade, in the recently termed "dust bowl" of the great plains. The soil is a Richfield silt loam and represents a large area important in the production of wheat and sorghums.

There will be approximately 520 plots, varying in size from one thirtieth of an acre to about one fifth of an acre, which will be devoted to work on varietal tests, seedbed preparation, methods of summer fallow, and rates and dates of seeding of wheat and sorghums.

In addition to the work with wheat and sorghums there will be tests of grass, barley, oats, beans, and cowpeas relative to their adaptability to southwestern Kansas.

Cooperative work on varieties of corn, sorghums, wheat, grasses, barley, oats, alfalfa, beans, and sweet clover will be carried on with farmers and the county agricultural agents of eleven counties in this region in conjunction with the experiment field.

It is expected that within a few years one or two more fields will be established in this part of the state and that they, together with the cooperative tests and the field now started, will yield data of considerable importance to the agriculture of the state.

G. L. McColm, '35, is assistant county agricultural agent at Colby.

V. R. Oline, '35, is county agricultural agent of Gray county.

S. D. Capper, '21, is in the Soil Conservation Service, Huron, S. Dak.

W. H. Teas, '24, is working for the Soil Conservation Service in Kansas.

H. L. Baker, '22, is instructor of psychology in Simmons College, Boston, Mass.

W. A. Wishart, '35, is assistant county agricultural agent in Wilson county, Fredonia.

Fred C. Schopp, '31, is teaching vocational agriculture in the Tampa Rural High School.

W. L. McMullen, '32, is director of vocational agriculture in the Colby Community High School.

E. D. Chilcott, '32, replaced W. H. Teas, '24, in the Kingman High School as teacher of vocational agriculture.

Erwin Abmeyer, '33, is superintendent of the northeastern Kansas experiment fields. His headquarters is Atchison.

E. J. Gantenbein, '35, is employed as foreman with the Ojio Valley Cooperative Association for unemployed, at Ojio, Calif.

J. W. Barger, '22, is acting head of the Department of Agricultural Economics in the A. and M. College of Texas, College Station, Tex.

P. W. Cockerill, '15, is professor of agricultural economics in the New Mexico College of Agriculture and Mechanic Arts, State College, N. Mex.

G. C. Moore, '33, recently in the employ of the Perry Packing Company, Manhattan, is now operating a hatchery for Armour and Company at Marysville, Kan.

R. F. Brannan, '30, who until recently has been managing a branch poultry station for the Perry Packing Company, has been transferred to Hanover, Kan., where he is in charge of a hatchery.

Lyle Mayfield, '28, who was county agricultural agent in Clark county several years, became manager of the Drake Ranch in the northeast corner of Clark county September 1. This is a well-watered 5,000-acre ranch and Lyle is feeding 5,000 New Mexico steer calves this winter.

Dr. K. S. Quisenberry, '21, well-known agronomist, in charge of U. S. D. A. wheat investigations, has had his headquarters changed to Lincoln, Neb. There he will be able to direct his work more advantageously and strengthen the cooperation with the Agricultural Experiment Station of Nebraska, as well as other stations in his territory.

