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The KANSAS AGRICULTURAL STUDENT



VOL. IX, No 2 DECEMBER, 1929
MANHATTAN, KANSAS

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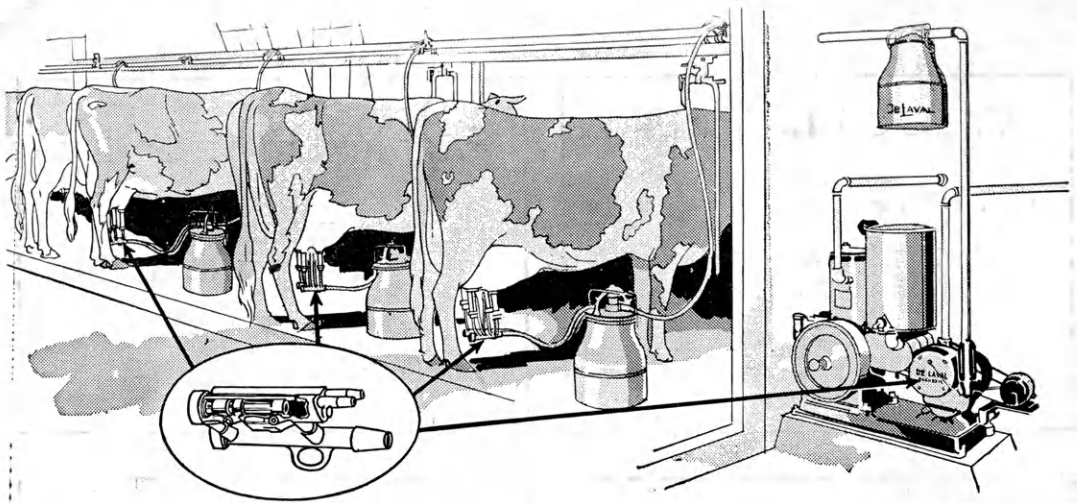
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A GRAZING SCENE ON JUNIATA FARM, COMMONLY KNOWN AS CASEMENT RANCH, ABOUT FOUR MILES NORTH OF MANHATTAN

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KANSAS STATE AGRICULTURAL COLLEGE
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CLASS IN FRESHMAN LECTURES, FIRST SEMESTER, 1929-'30

Freshman Lectures is a one-credit orientation course given in the Division of Agriculture. As far as possible it includes every first- and second-semester freshman in the division. Practically 100 per cent of the group is shown in the picture.



The Kansas Agricultural Student

VOL. IX

Manhattan, Kansas, December, 1929

No. 2

The Agricultural Marketing Act

L. A. Peck, '31

Since the enactment by congress of the Agricultural Marketing Act approved June 15, 1929, farmers and agricultural leaders have been divided in their opinion of its work. Some hail it as the long-hoped-for farm relief, but others are more skeptical and conservative. To what extent it will revolutionize agriculture is yet to be seen. However, analysis of the act will show it to be the most powerful and far-reaching piece of national legislation ever passed for the benefit of agriculture.

A Federal Farm Board was created by the act. It is composed of nine members, eight of whom are appointed directly by the President, and the Secretary of Agriculture, who is a member *ex officio*. The board is vested with unusually broad and far-reaching powers. These powers were conferred to enable it to carry out the avowed policy of congress in dealing with the agricultural situation. This policy is stated as follows in the act:

"It is hereby declared to be the policy of congress to promote the effective merchandising of agricultural commodities in interstate and foreign commerce so that the industry of agriculture will be placed on a basis of economic equality with other industries and to that end to protect, control, and stabilize the currents of interstate and foreign commerce in the marketing of agricultural commodities and their food products."

This board is authorized to carry out the act by: (1) Minimizing speculation, (2) preventing inefficient and wasteful methods of distribution, and (3) encouraging and financing the organization of producer-owned and producer-controlled cooperative marketing associations.

It is presumed that surpluses like the 1929 wheat farmer's "bugaboo" are to be prevented and controlled through orderly production and distribution. Prevention of surpluses, according to congress, will tend to

minimize the excessive fluctuations and depressions in prices of commodities.

Congress has defined for the purpose of this act a surplus to be any seasonal or year's total surplus produced by the United States, either local or national in extent.

The aforesaid special powers of the board are as follows:

1. To encourage the organization, improvement in methods, and development of effective cooperative associations.

2. To promote education in the principles and practices of cooperative agricultural marketing.

3. To keep advised from any available sources and make reports as to crop price experiences, prospects, and supply and demand at home and abroad.

4. To investigate conditions of overproduction and advise as to preventions of such overproduction.

5. To make investigations and reports and publish same upon the following: Land utilizations for agricultural purposes; reduction of operation of unprofitable land in cultivation; methods of expanding markets at home and abroad for agricultural commodities and their food products; methods of developing by-products and new uses for agricultural commodities; and transportation conditions and their effect on the marketing of agricultural commodities.

The board is authorized to establish clearing house associations with independent dealers as well as cooperative associations eligible for membership.

In order to adequately finance the extensive activities of the board, congress is authorized to appropriate \$500,000,000 as a revolving fund to be administered by the board. The act authorizes the board to loan from this fund to cooperative associations to assist them in:

1. The effective merchandising of agricul-

tural commodities and the food products thereof.

2. The construction or acquisition of physical marketing facilities for storing, processing, or merchandising agricultural commodities and their food products.

3. The formation of clearing house associations.

4. Education of the producers of the commodity handled by the association.

5. Enabling the association to advance to its members a greater proportion of the market price of a commodity than is practicable by other credit agencies.

Loans are made to cooperative associations at a rate of interest not to exceed 4 per cent per annum on the unpaid principal.

The president of the United States is authorized to have appointive power and authority over the board in all its functions, appropriation records, property, and office equipment. In accordance with the act he selected the appointive members of the board, "With due consideration to having the major agricultural commodities produced by the United States fairly represented by the board."

The eight men selected by President Hoover have been eminently successful in their private affairs. It is probable that all are serving on the board at a sacrifice to their private affairs. These appointive members are as follows:

Alexander Legge, Chicago, Ill., for seven years prior to his appointment president of the International Harvester Company. Mr. Legge was chosen as an outstanding business man.

James C. Stone, Lexington, Ky., president of the Burley Tobacco Growers' Cooperative Association and an owner of live-stock farms. Mr. Stone represents the tobacco growers on the board.

Carl Williams, Oklahoma City, Okla., editor of the Oklahoma Farmer-Stockman. Mr. Williams has been active in organization for the cooperative marketing of cotton.

C. B. Denman, Farmington, Mo., president of the National Live Stock Producers Association and a farmer. Mr. Denman is considered to be representing the interests of the live stock producers on the board.

Charles C. Teague, California, president of

the California Fruit Growers' Cooperative Association and of the Walnut Growers' Cooperative Association. Mr. Teague represents Pacific coast fruit growers.

William T. Schilling, Minnesota, president of the Twin Cities Milk Producers' Association and representative of Mid-western dairy interests.

Charles S. Wilson, New York, former New York State Commissioner of Agriculture, secretary of the Western Fruit Growers' Cooperative Association, and a farmer. Mr. Wilson's interests are eastern fruit growing and dairying.

S. R. McKelvie, Lincoln, Neb., editor of the Nebraska Farmer and former governor of Nebraska. Mr. McKelvie is looked upon as representing the wheat growers on the board.

Since the first meeting of the board on July 15 the Florida Citrus Fruit Growers have been granted by the board a loan of \$300,000 to help them combat the fruit fly, the raisin producers of California have been assured of help to the amount of \$4,500,000 and a tentative advance of from \$5,000,000 to \$10,000,000 has been authorized to aid the cotton cooperative associations in the South. Loans approved for wheat growers totaled \$10,000,000 by October 2, 1929. Up to October 2 applications for loans totaling approximately \$57,000,000 had been tentatively approved.

Briefly, the policy of the board—so far as can be gathered from official pronouncements—is to encourage distributors of farm products to join cooperative marketing associations which qualify under the Capper-Volstead national cooperative marketing act of 1922 and to unite these cooperatives into national commodity cooperatives or sales corporations, under direction of the Federal Farm Board.

Whether or not the agricultural marketing act will really prove to be the aid to the farming industry that its originators intended that it should be, is a question few have been able to decide for themselves. The reason for this indecision is largely the newness of the whole proposition and the conservative policy of the board. A long-time slowly operating program apparently has been adopted.

(Continued on page 64)

The Kansas Wheat-Belt Program

A. L. Clapp, '14
Extension Agronomist

The five-year Kansas wheat-belt program is designed especially to fit the needs and natural resources of the central and western sections of the state. Wheat produced in Kansas affects practically everyone in the state, as the average yearly income from this crop is more than one hundred million dollars.

This five-year program, which is now in its fifth year, is being carried out by the Kansas State Agricultural College in cooperation with the Kansas State Board of Agriculture; the Southwestern Wheat Improvement Association; the Atchison, Topeka, and Santa Fe, Chicago, Rock Island, and Pacific, and Union Pacific railroads; the Kansas City, Mo., Chamber of Commerce; the Kansas State Grain Inspection Department; and local chambers of commerce and county farm bureaus all over the Kansas wheat belt.

This program provides for improvement along four lines; namely, marketing, agronomy, entomology, and plant pathology. The work in marketing has to do with the handling of wheat on a quality basis and a careful study of market conditions as a guide to marketing. The agronomy work considers the proper handling of the soil in order to conserve moisture and furnish a sufficient supply of available nitrates to grow a profitable crop, and the use of pure seed of adapted varieties. The work in entomology presents the best methods of controlling those insects that affect the wheat crop, such as Hessian fly, chinch bug, wire worm, and wheat straw worm. The principal part of the plant pathology work is the control of the smuts.

Four years of work on the wheat-belt program has shown very outstanding results in the improvement of methods of growing and marketing the wheat crop. A campaign to interest elevator men in buying wheat on a quality and grade basis was started in 1926 and now the grain buyers in 10 counties are cooperating in this effort to make it a benefit to the farmer to produce quality wheat. Farmers are actually studying their markets. It required 750 copies of the "Kansas Agri-

cultural Situation" to meet the demand in 1925 and in November, 1929, it required 3,400 copies.

During the past four years of the program, 2,059,500 bushels of certified and approved seed was sold. This was all good pure seed of adapted varieties. In 1929, 10 counties in which summer fallow applies reported 185,961 acres of fallow or partial fallow followed by wheat.

Mr. F. L. Timmons, former county agricultural agent of Pratt county, said it was his opinion that in 1929, 25 per cent of Pratt county wheat land had been worked by July 15, 50 per cent by July 20, 80 per cent by August 1, and practically all by August 10. This is an example of the effectiveness of the wheat-belt program on early tillage. In 1925, county agricultural agents reported 127,150 acres of wheat being grown in rotation with other crops. In 1929, they reported 1,719,476 acres.

During the past four years Kansas farmers have learned as never before to recognize and to control insects. In 1929, farm bureau counties in this wheat belt reported 7,224 farmers controlling insects, affecting wheat on 1,223,557 acres. During this last season, the wheat straw worm for the first time took a toll of many thousand bushels of wheat. Before the summer was over, however, the majority of the best farmers knew the best methods of control and they are rapidly putting these methods into practice.

Kansas farmers have learned the toll that smut takes from their wheat and sorghum crops each year and are fighting it with the best known methods. County agricultural agents reported 294,845 acres of wheat treated for smut in 1925 and 1,297,366 acres in 1929.

A conference of all the Kansas wheat-belt program cooperators held at Manhattan, November 9, 1929, laid definite plans for carrying this program to the farmers and grain men of 60 Kansas counties during 1930. These 60 counties produced 10,388,065 acres,

(Continued on page 64)

Undulant Fever and the Dairy Cow

Charles H. Kitselman
Associate Professor of Pathology

Undulant fever is a disease of humans which has but recently attracted the attention of public health workers, physicians, and veterinarians. About 1,000 cases have been reported in the United States of America and in Canada since 1927.

The germ causing this disease very closely resembles the abortion germ in cattle and hogs and is even thought by some to be identical. Bruce of England discovered the causative agent of malta fever, a disease caused in humans by eating infected goat products. Evans showed a close relationship existing between the Bruce germ of malta fever and the abortion germ of cattle and hogs. Undulant fever is the Americanized name of malta fever and probably will be the name adopted throughout the world to designate those cases in humans not traced to goat products.

Since the relationship between cattle affected with abortion disease and humans affected with undulant fever was shown, many physicians have been alert to diagnose this disease.

Abortion disease in cattle is characterized by one or more of the following: The act of aborting, the retention of the afterbirth, difficulty in again getting the cow with calf, udder disease, and early calthood disease.

Undulant fever in the human is characterized by a fever of the intermittent type, that is, a fluctuating fever, and one which may persist for varying lengths of time. Headache, general depression, and weakness usually are seen. There may or may not be involvement of the joints, and the blood picture is quite constant in most cases.

A diagnosis of abortion disease in cattle is based upon the agglutination or blood test, and the same test is diagnostic for undulant fever of humans. In fact the same germ emulsion can be used in diagnosing either disease, and is one basis for assuming that a close relationship exists between the two germs. Of course, the isolation of the germ from the patient's blood or urine is diagnostic in undulant fever and from the aborted

calf, fetal membranes, milk, or vaginal discharge in abortion disease of cattle.

It has been stated that to date there has not been a single case of undulant fever in humans which could undisputedly be traced to consumption of milk from abortion infected cows. However, there are a number of cases of undulant fever in which milk from abortion infected herds seemed to be the only available source of infection.

There are three strains of the abortion germ designated according to the specie of animal from which it is derived: the goat, the swine, and the cattle strain. Of these the cattle strain is the least infectious or virulent for human beings.

It is significant to note that only two or three cases of undulant fever have been reported in children under five years of age, although children are the greatest consumers of milk. All ages over five years are affected, but young adults and males in the proportion of three to one are shown to be most frequently affected. Relatively few persons who drink raw milk become infected, although a large per cent of such milk consumed is infected with the cattle abortion germ. The factor of resistance of the exposed individual is, therefore, of great importance, or else at times a cow can harbor and eliminate in her milk one of the other strains of the germ, probably the swine strain.

Probably not more than 50 per cent of reacting cattle eliminate the germ in the milk, and certainly all cattle strains are not equally capable of producing disease in the smaller experimental animals. However, the fear of contracting undulant fever from raw milk will affect the dairy industry, whether or not milk is more than a remote danger. Producers of certified milk are already ridding their herds of Bang's abortion disease. Direct contact with infected animals, both cattle and hogs, and handling infected pork products seem to constitute an active source of infection for man. Pending the establishment of an abortion-free herd, efficient pasteurization

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The Peacock of the Prairie

H. C. Larsen

Graduate Assistant in Agricultural Economics

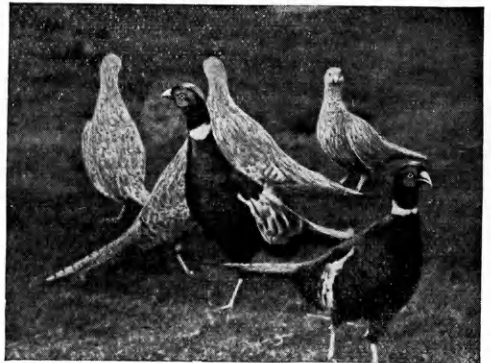
One of the big problems which face the people of many states at the present time is the restoration and conservation of their game supply. With the forest areas being constantly depleted, many swamps being drained, and much of our wild land being brought under cultivation, the natural habitat of game is approaching a vanishing point. This is a problem which has attracted the attention of the sportsman, caused numerous articles to be published in our outdoor magazines, and brought forth large sums of money to be spent on its behalf. Most of this time, space, and money will yield large returns, not in dollars and cents but in recreational values for our constantly increasing population.

The apparent scarcity of the pheasant in Kansas has provoked the following questions: "Has restoration of the bird been carried on in a desultory fashion? Can it be improper conservation? Does Kansas have a natural enemy of the pheasant? Is not its climate suitable? Or just what is the reason for the scarcity of such a fine bird?"

From all outward appearances, the country seems ideal. Correspondence with the State Forestry Fish and Game Commission reveals that conditions are favorable and that efforts are being put forth to restore this bird in Kansas. In fact, this fall the State Forestry Fish and Game Commission has released 3,000 pheasants in Kansas, plantings being made in every county of the state and to supplement this, 1,200 eggs were distributed which, with an estimated hatch of 60 per cent, should allow the liberation of about 800 birds this fall. This means that Kansas will have pheasants on her prairies, provided, of course, the state will receive proper cooperation from her citizens in the care of the bird after it is liberated and until it has become established.

There are a few people commonly called "pot hunters" who do not have enough community spirit to allow restoration policies to be carried out in any area. Until these people have been properly taken care of, stocked birds will be killed and not allowed to multi-

ply. Once established, however, the polygamous habit of the pheasant makes it possible for very fast stocking of any restricted area and in some cases overstocking. This, however, is easily cared for by the length of the hunting season and the bag limit. For best results it is desirable to maintain a ratio of not more than one male to five females and it may run as high as one male to ten females. When males become too numerous



Courtesy of The Game Breeder.

CHINESE RINGNECK PHEASANTS

The Chinese ringneck pheasant (a hybrid between the English common or black-neck pheasant and the Chinese pheasant) has been used almost exclusively where stocking operations have been successful. Its qualifications which make it most fit for restocking operations are its polygamous and prolific nature, while sufficiently controllable to be successful on game farms. It retains its wariness and wildness so as to be able to care for itself when released and its hardiness makes it especially adaptable to northern climates.

they tend to disturb nesting and so must be restrained through hunting laws.

Conditions here will make it necessary in many cases for the pheasant to change his original habits and select roosting places in stubble, dried swamps, and ravines, rather than in trees as he would in his natural habitat. The birds released are usually ones which have been raised under care and when put upon their own resources in an unnatural environment they are not able to survive. These facts necessitate the cooperation of the

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MANHATTAN-KANSAS

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OUR COVER PAGE

Our cover page presents a familiar November and December scene not only in the 18 counties in northeastern Kansas commonly known as the Kansas corn belt, but in a more limited way, in practically every Kansas community. Corn is our second crop in economic importance.

This picture, however, has a special significance because of its connection with K. S. A. C. and the corn improvement program of the state. It was taken on the farm of the Frey Brothers, 1½ miles north of Manhattan, on the field entered in the Five-acre Corn Improvement Contest in Riley county. The farm is operated by John C. Frey, '27, and Lester R. Frey, '28. Lester's wife, Rachel Hurley-Frey, is a member of the Class of 1926. Lester Frey is the husker in the picture.

This Pride of Saline corn placed first in the Riley county contest. The yield, as estimated by the corn contest harvesting committee, was 87.88 bushels per acre. Both in purity and freedom from disease the sample entered in the county contest graded 100 per cent. The official test showed 97.3 per cent germination.

The seed the Frey Brothers used in plant-

ing this field was taken from the prize-winning corn of Merle E. Goff, '23, and Harold A. Goff, '33, winners of the Riley county contest in 1928. Their yield was 99.25 bushels per acre.

The Frey farm is called the Brae Strath farm, Scotch words meaning "Hill and Valley."

HONOR STUDENTS

The Ag Student is glad to take every occasion to recognize students who do outstanding college work. It therefore congratulates and commends the freshmen of last year who were honored by Phi Kappa Phi in their annual Recognition Program, Friday, December 6, 1929. For names of these men and scholarship figures, see "College Notes."

Many of these men have keen minds and are in college to train them. Others undoubtedly are scarcely above the average in mental ability, but they are students whose definite objective is to get the most out of their curricula and they make up for what they lack in high-powered mental traits by organization of their work and by regularity and intensity in application.

These men have shown their mettle. They are marked men. May their good records be an inspiration for the future.

Judging Contests in the Training of a K. S. A. C. Student of Agriculture

C. Porter McKinnie, '30

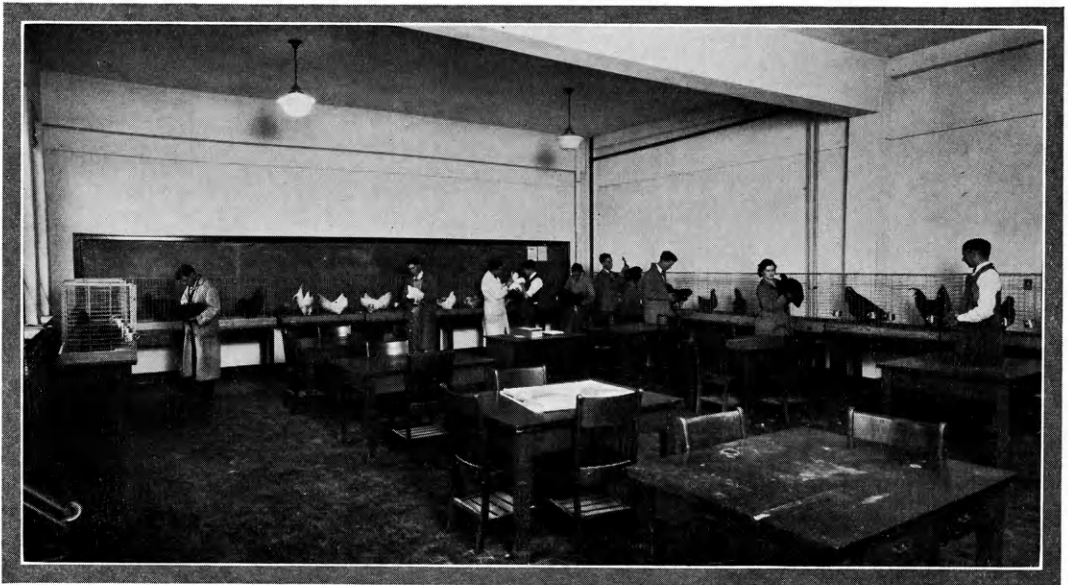
The finest and most worth-while of the activities open to students of agriculture in K. S. A. C. are the contests in the judging of farm products. Such contests are sponsored in five departments—the Departments of Agronomy, Animal Husbandry, Dairy Husbandry, Horticulture, and Poultry Husbandry. These contests may be divided into two series; namely, student judging contests and intercollegiate contests. The former are largely preliminary to the latter. They reach large numbers of students, locate and stimulate students of ability in their fields, and demonstrate lines of procedure and requirements for the most important contest that can be set up for the most capable and best-trained students the country over.

The intercollegiate contests are high points in the college careers of their entrants. Each college student of agriculture would do well before the end of his freshman year, or at least early in his sophomore year, to deter-

mine for himself that he would make a certain intercollegiate judging team before graduation.

Competition with teams from other colleges is an invaluable training. The successful contestant must possess a cool head, quick yet accurate powers of observation, and the ability to weigh and decide promptly on details. Team work is also essential. The members must be consistent in their placings and reasons. Oral reasons are always required in live-stock judging and they are unsurpassed in providing training in self expression. The successful contestant must not only know his "stuff" and have confidence in his own judgment but he must have a pleasing attitude and bearing and make a first-class presentation of his case.

Preparation for such efforts is no small part of a student's education. In the crises of life work must be done under trying conditions. One of these formal, high-powered



A SCENE IN THE POULTRY JUDGING LABORATORY

This flashlight picture shows students judging several pens of birds, one of the try-outs for the poultry judging team.

judging contests is just a preliminary workout. The one who can think most clearly and be at his best in the most trying circumstances is, other things being equal, the most successful. Much time and effort and money are put into these judging contests, but they are well worth it all.

A brief statement of the direct training provided in the departments above mentioned for these intercollegiate judging contests may be of interest. During recent years eight agricultural judging teams have been prepared annually for the contests. Some teams participate in two or three contests. And even though occasionally a student wins a place on two teams there is opportunity each year for approximately thirty-five students to be members or alternates on some K. S. A. C. intercollegiate judging team.

The crops judging team are prepared for their contests in the Department of Agronomy. The elementary work is given in the required course, Farm Crops. This is followed by the training provided in Grain Grading and Judging, a course offered the second semester each year. The basic part of the final preparation is provided in the course, Advanced Grain Judging, offered each fall. The course consists of identification, commercial grading, and judging. It gives a broad view of crop production in the United States and a general idea of the application of the United States grain and hay grading standards.

The men who make the crops judging team visit the Kansas State Grain Inspection Department and the United States Department of Agriculture Hay and Seed Division offices in Kansas City where they do special additional practice work prior to the contest.

The Department of Animal Husbandry prepares three teams of agricultural students for intercollegiate contests each year. Its live-stock judging team works with four classes of live stock—beef cattle, horses, swine, and sheep. The freshman course, Live Stock Judging (next year to be called Elements of Animal Husbandry), provides the preliminary training. Advanced Live Stock Judging I, elective, first semester, junior year, offers more intensive training. The highest eight men in this class usually make a trip to

the University of Nebraska during the holidays for a two-day workout on their college live stock. What is known in college circles as the junior team, five contestants and an alternate, is picked from this group of eight students. This junior live-stock judging team competes at the Denver National Live Stock Show in January each year.

Advanced Live Stock Judging II, ordinarily taken the second semester of the junior year, presents the most basic preparation possible for the senior team the following fall. Then in the fall the course, Form and Function in Live Stock, is designed especially to prepare the men for the final tryouts and finally the big intercollegiate contests. Five men and an alternate are picked for these intercollegiate live-stock contests which are three in number, one each at the Kansas National Live Stock Show at Wichita, the American Royal Live Stock Show at Kansas City, and the International Live Stock Exposition at Chicago. Several valuable side trips are made between these contests, notably the one to see E. L. Humbert and Son's Belgian and Percheron horses at Corning, Iowa.

A majority of the members of the junior live-stock judging team in January usually make the senior team the next fall. The fall tryout is open, however, and new material may and often does displace one or more members of the junior team.

Meats judging teams are also trained by the Department of Animal Husbandry. A two-credit course in Meats is offered the second semester each year. It provides the preliminary training. In the fall a course in Advanced Meats provides the main portion of the final training. Experimental butchering is included, partially on the side, and other valuable training is secured in trips to markets and packing houses to study methods of slaughter, dressing, cutting, and grading carcasses.

The Department of Dairy Husbandry prepares two intercollegiate judging teams, one for the judging of dairy cattle and the other for the judging of dairy products—such as whole milk, butter, ice cream, and cheese.

An introduction to dairy judging is provided in the freshman course, Elements of Dairying. This is followed by a one-credit

elective course, Dairy Judging, which gives the elementary but basic training. The most important training for the contest is then given in a second-semester, one-credit course, Advanced Dairy Judging. A few visits to outstanding dairy farms are included in this course.

In the fall only judging-team tryouts are

the work is given in Elements of Horticulture; basic material is presented in the laboratory work in Practical Pomology; and the thorough and final training is given in the laboratory work in Advanced Pomology with such additional time as is always found necessary to give the members of the team accuracy and confidence.



ONE OF THE TRY-OUTS FOR THE SENIOR LIVE STOCK JUDGING TEAM
The boys have just judged and given oral reasons on this group of Shropshire ram lambs.

provided. The team must usually be selected before the close of September as the contest at the Waterloo Dairy Cattle Congress comes early in October.

A one-credit course in Dairy Manufacturing Problems provides the chief class training for the team in judging dairy products. Extra experience in judging or tryouts are always necessary regardless of the number trying out for the team.

The Department of Horticulture prepares its apple judging teams. An introduction to

In the required course in Farm Poultry Production offered by the Department of Poultry Husbandry students devote four three-hour periods to culling and judging. This is but an introduction. The basic training for the intercollegiate poultry judging contest is provided in the three-credit course, Poultry Judging, offered the first semester each college year. This course gives intensive work in each of three divisions of the big contest; namely, production judging, exhibi-

(Continued on page 52)

COLLEGE NOTES

AGGIES DOWN MISSOURI AGAIN IN APPLE JUDGING

For the third time the Kansas Aggie apple judging team won the silver loving cup presented by the Kansas State Horticultural Society. The cup is now the permanent possession of K. S. A. C.

The contest was held in conjunction with the Sixty-third Annual Meeting of the Kansas State Horticultural Society, the Missouri State Horticultural Society, and the Missouri Valley Horticultural Conference at Atchison, Kan., on December 4, 5, and 6, 1929.

There was no alternate on the team as all four members of the team judged and each score counted the same. Here-to-fore, the alternate has been allowed to judge but his score did not count on the team's placing. The team as a whole scored 8,725 points out of a possible 8,900, thus making 98 per cent perfect. The team was composed of:

Mrs. Sam G. KellyManhattan
R. B. MatherBurdett
Merrill M. TaylorPerry
R. H. TrompeterHorton

Haag of Missouri was high man of the contest. Mather and Haag tied for first in judging with Trompeter as a close second. Mrs. Kelly made a perfect score in identification with Taylor second, missing only one out of 100 apples.

Although Missouri had the high man of the contest, the four members of the Aggie team were close on his heels.

POULTRY JUDGING TEAM WINS

With a lead of 150 points over its nearest rival the K. S. A. C. poultry judging team won the Mid-west Intercollegiate Poultry Judging Contest held in Chicago, Saturday, December 7, 1929. The eleven competing teams from the following institutions finished in the order named: Kansas State Agricul-

tural College, University of Minnesota, University of Illinois, Iowa State College, North Dakota Agricultural College, Purdue University, University of Missouri, Oklahoma A. & M. College, University of Nebraska, Texas A. & M. College, and Michigan State College.

The Aggie Team was composed of the following students:

Mark M. TaylorHarveyville
R. E. Phillips, Jr.Joplin, Mo.
E. M. LearyLawrence
Edith Bockenstette (alt.)Sabetha

In the entire contest Leary was second high individual, Phillips fifth, and Taylor sixth. The Kansas team placed first in production judging, first in the written examination over the American Standard of Perfection, and ninth in exhibition judging. Taylor was third, Leary fifth, and Phillips eighth high individual in production judging. In the written examination Leary placed first, Phillips third, and Taylor fifth.

Twelve medals were offered as prizes. The Kansas team won six of these including the three gold medals awarded to the winning team by the Collis Products Company of Clinton, Iowa.

Among the coveted honors of the contest are five beautiful silver loving cups, which with their donors are as follows:

Production Cup, presented by—
Poultry Tribune
Mount Morris, Ill.

Examination Cup, presented by—
O. K. Poultry Journal
Tulsa, Okla.

Permanent Championship Cup, presented by—
Purina Mills
St. Louis, Mo.

Challenge Trophy, presented by—
U. S. Egg Society
Chicago, Ill.

Exhibition Cup, presented by—
Keyes-Davis Company
Battle Creek, Mich.

The Kansas team won the first four of these trophies.

The Challenge Cup is a new cup put up

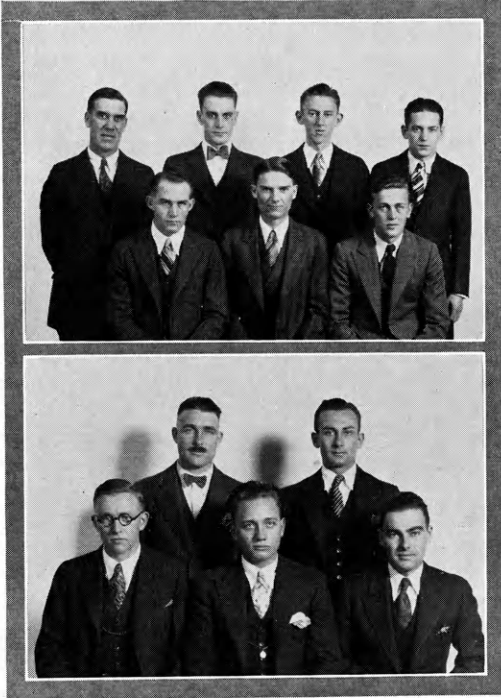
for the first time this year. It must be won three times to become the permanent property of any school.

Cash prizes amounting to \$110 were won by the highest ten individuals in the entire contest. Second place brought \$20 to Leary, while Phillips and Taylor each won \$10.

Last year the Kansas team placed second, being defeated by 18 points for first place. S. Roger Stewart of Kansas was high individual of that contest. It is certainly only

KANSAS AGGIE LIVE STOCK JUDGING TEAM HAS A GOOD SEASON

The collegiate live stock judging team representing K. S. A. C. made a very good showing this fall. It competed in three contests: Kansas National Live Stock Show, Wichita; American Royal Live Stock Show, Kansas City; and International Live Stock Exposit-



LIVE STOCK JUDGING TEAM (ABOVE); MEN'S MEATS JUDGING TEAM (BELOW)

Live stock judging team. Standing: Prof. F. W. Bell (coach), J. A. Terrell, P. R. Chilen, H. R. Bradley; seated: F. H. Schultis, R. W. O'Hara, R. M. Hoss.

Men's meats judging team. Standing: Prof. D. L. Mackintosh (coach), T. R. Gile; seated: M. L. Cox, H. W. Ellis, Walter P. Powers.



POULTRY JUDGING TEAM (ABOVE); APPLE JUDGING TEAM (BELOW)

Poultry judging team. Standing: Prof. H. M. Scott (coach), Mark M. Taylor; seated: Robert Phillips, Jr., Miss Edith Bockenstette, E. M. Leary.

Apple judging team. Standing: Prof. W. F. Pickett (coach), R. B. Mather; seated: R. H. Trompeter, Mrs. Sam G. Kelly, Merrill M. Taylor.

fair to say that a great deal of the credit is due to Prof. H. M. Scott of the Department of Poultry Husbandry who coached both of these teams.

tion, Chicago. While it won no first, it placed well up in each contest so that its total score was near the top. The team was coached by Prof. F. W. Bell of the Department of Ani-

mal Husbandry. It was composed of the following students:

H. R. Bradley (alt. at Kansas City) Kidder, Mo.
 F. H. SchultisSylvan Grove
 R. W. O'Hara (alt. at Wichita)Blue Mound
 R. M. Hoss (alt. at Chicago)Potwin
 J. A. Terrell (alt. at Wichita)Syracuse
 P. R. ChilenMiltonvale
 H. A. Paulsen (at Wichita only)Stafford

In the Wichita contest, held in connection with the Kansas National Live Stock Show, the team competed November 14, 1929, and placed second among seven teams. Bradley was third high individual in the entire contest and Schultis was seventh. The team was second on sheep, second on hogs, and third on cattle.

In the contest at the American Royal Live Stock Show in Kansas City, November 16, 1929, the team placed seventh among fifteen



WOMEN'S MEATS JUDGING TEAM

Standing: Prof. D. L. Mackintosh (coach), Miss Orpha Brown.
 Seated: Mrs. Vivian Abell, Miss Mary Wilson, Miss Frances Wentz.

teams entered. O'Hara was eighth high man in the contest. The team was third in the judging of hogs.

At the Chicago contest, November 30, 1929, the team placed sixth among 21 teams. Chilen's score of 879 gave him a tie for fourteenth place. He and O'Hara with a score of 871, Bradley with 864, and Schultis with 843, all placed in the high 40 individuals among a total of 105 entered. The team was second in the judging of horses.

The scores made by the high teams at Chicago or those competing in two or more contests are shown in the following tabulation:

Team	K. C.	Chicago	Wichita	Total
Oklahoma	4,529	4,380	2,625	11,534
Texas	4,235	4,310	2,634	11,179
Kansas	4,292	4,258	2,627	11,177
Wyoming	4,218	4,282	2,474	10,974
Iowa	4,220	4,215	2,537	10,972
Missouri	4,255	4,143	2,482	10,880
Purdue	4,412	4,385	.....	8,797
Ohio	4,329	4,383	.....	8,712
Nebraska	4,326	4,213	.....	8,539
Colorado	4,151	4,053	2,560	10,764

Although the team made no exceptional records in any of the contests, a summary of the total scores of all teams for all the contests shows that the Kansas team was near the top as usual. Fifteen teams competed at both the American Royal and the International Live Stock Shows. The scores of the two contests place Kansas at the top in horse judging, third in hog judging, ninth in cattle judging, and thirteenth in sheep judging.

The coach and members of the team are to be congratulated for the splendid showing they made. Although the Kansas live stock judging teams have placed higher in times past, no group has worked harder or deserved more credit for its efforts than the 1929 team.

KANSAS MEATS JUDGING TEAMS MAKE EXCELLENT SHOWING

The Kansas State Agricultural College was represented this year by both a men's and a women's meats judging team. The men's team competed only at Kansas City while the women's team was entered at both Kansas City and Chicago, making an excellent record in both contests.

In the Kansas City contest, held in connection with the American Royal Live Stock Show, the men's team placed second. The team was composed of:

M. L. Cox	.....Goodrich
T. H. Gile	.....Scandia
W. P. Powers	.....Netawaka
H. W. Ellis (alt.)	.....Coldwater

The scores of the six competing teams were:

Illinois	.....2,311
Kansas	.....2,284
Iowa	.....2,278
Nebraska	.....2,277
Missouri	.....2,232
Pennsylvania	.....2,190

The team placed second in the judging of pork, and third in both lamb and beef. Cox of Kansas was second high individual in the

entire contest, being but one point behind the high man from Illinois.

The women's team placed first at Kansas City with two other teams competing. In the Chicago contest, held in connection with the International Live Stock Exposition, the team was fourth among nine teams. The members of the team were:

Mrs. Vivian AbellRiley
 Orpha Brown (alt. at Chicago) ..Edmond
 Frances WentzAmes
 Mary Wilson (alt. at Kansas City)
 Council Grove

The scores of the women's team in these two contests were:

	Chicago	Kansas City
Pennsylvania	2,332	.....
Nebraska	2,275	2,359
Iowa	2,272	.....
Kansas	2,245	2,509
Missouri	2,239	1,891
Ohio	2,211	.....
South Dakota	2,169	.....
Illinois	2,143	.....
West Virginia	2,019	.....

Mrs. Abell was high individual in the Kansas City contest; Miss Brown, second; and Miss Wentz, fourth. The team was first in both identification and judging. Miss Wilson was fourth high individual in the Chicago contest and Miss Wentz, seventh.

The Chicago contest was open to both men and women. Besides the team of women from Kansas there was one woman on the Ohio team. Of these four women in the contest, three placed among the first ten individuals.

Prof. D. L. Mackintosh of the Department

of Animal Husbandry coached both Kansas teams.

Meats judging is a comparatively new phase of collegiate judging activity. This is the third year that K. S. A. C. has sponsored meats judging teams.



DAIRY PRODUCTS JUDGING TEAM (ABOVE);
 GRAIN JUDGING TEAM (BELOW)

Dairy products judging team. Standing: Prof. W. H. Martin (coach); seated: M. L. Magaw, L. M. Sloan, W. J. Lynn.

Grain judging team. Standing: Prof. J. W. Zahnley (coach), J. W. Decker; seated: J. J. Curtis, W. H. Painter, J. H. Greene.

**THE GRAIN JUDGING TEAM COMPETES
 IN KANSAS CITY**

The K. S. A. C. grain judging team placed fourth at the intercollegiate contest held in connection with the American Royal Live Stock Show in Kansas City, November 16 to 23, 1929. Five teams competed, the others being from North Carolina, Iowa, Oklahoma, and Nebraska. The Kansas team was composed of J. J. Curtis, Toronto; J. W. Decker, Holton; J. H. Greene, Beverly; and W. H. Painter, Meade (alternate).



DAIRY CATTLE JUDGING TEAM

Standing: Prof. H. W. Cave (coach), R. W. Stumbo.

Seated: J. L. Wilson, Walter P. Powers, H. R. Bradley.



The scores of the competing teams were:

Iowa	4,594.9
North Carolina	4,434.2
Nebraska	4,364.0
Kansas	4,321.8
Oklahoma	4,285.0

The Kansas team placed third in judging and in identification and last in grading. Curtis was seventh high individual in the contest, Decker was tenth, and Greene fourteenth. Curtis tied for first place in identification, the only outstanding individual placing of the Kansas men.

THE DAIRY PRODUCTS JUDGING CONTEST

The dairy products judging contest which was held October 15, 1929, in connection with the National Dairy Show at St. Louis, was held at the milk plant of the Pevely dairy. Fifteen teams of three members each participated in the contest. Milk, butter, ice cream, and American cheese were the products judged.

The Aggie team was composed of:

Merle L. Magaw	Ames
Leland M. Sloan	Leavenworth
William J. Lynn	Centralia

The Ohio State team placed first in the contest and the K. S. A. C. team, ninth. Lynn was sixth high individual in ice cream; Magaw was second in butter; and Sloan was second in milk and eighth in all products.

Prof. W. H. Martin of the Department of Dairy Husbandry was the coach.

KANSAS DAIRY JUDGING TEAM MAKES AN ENVIABLE RECORD FOR THE YEAR

On September 30, 1929, the Kansas Aggie Dairy Judging team took first place with a strong lead in the intercollegiate contest at Waterloo, Iowa. Twelve states were represented. This same Aggie team competed with 27 teams from the United States and Canada in the National Dairy Show at St. Louis, October 12, and placed third. The team was composed of:

Richard W. Stumbo	Bayard
Howard R. Bradley	Kidder, Mo.
John L. Wilson	Iola
Walter P. Powers (alt.)	Netawaka

The team as a whole was third on the judging of Holsteins, third on Jerseys, and seventh on Guernseys. Wilson was fifth high individ-

ual on Holsteins, Bradley was seventh on Guernseys, and Stumbo was eighth on Jerseys. Prof. H. W. Cave of the Department of Dairy Husbandry coached the team.

PHI KAPPA PHI RECOGNIZES FRESHMEN OF 1928-'29 HIGHEST IN SCHOLARSHIP

The outstanding feature of the annual Phi Kappa Phi recognition day program is the awarding of certificates to the 10 per cent of the freshmen of the preceding year, ranking highest in scholarship. Actual scholarship average is the only consideration. Since in determining the number to be honored the entire freshman enrollment of the year, including one-semester, second-year, and even third-year freshmen is used as the basis, the group honored is larger than if only actual bona fide first-year, two-semester freshmen were considered. The advantage, however, falls where it belongs, on the real first-year freshmen, hence the method of figuring is in no sense unfair.

The Division of Agriculture was represented on this Phi Kappa Phi honor list of 1928-'29 freshmen by 18 students. These men are named below in the order of their average scholarship for the year.

Name	Scholarship	
	Credits	Points average
Will Martin Myers	33	92 2.78
Leland Milton Sloan	34	91 2.67
Ralph Boyd Cathcart	33	83 2.51
Charles William Nauheim	33	81½ 2.46
John Russell Latta	33	79½ 2.40
Eugene Brune Mangelsdorf*	33	76 2.30
Jay Russell Bentley	30	63½ 2.10
George Adamson Gillespie	31	59½ 1.92
Harold Alvin Goff*	31	59 1.90
Luther Arthur Jacobson	33	62½ 1.89
Clinton Keith Tomson*	34	64 1.88
Leonard William Christal	27	49½ 1.83
Lee Harold Albin*	33	58 1.75
George Raymond Kent	33	58 1.75
Leonard Harold Montgomery	31	51½ 1.66
Elvin Elliott Steele*	33	53½ 1.62
Paul Leslie Jameson	33	52 1.57
Sterle Ernest Dale	33	51 1.54

* Not in college this semester.

ANNUAL STUDENT POULTRY JUDGING CONTEST A RECORD BREAKER

Valuable poultry judging team material showed up in the fifth annual students' poultry judging contest Saturday, November 2, 1929. The contest was sponsored by the Department of Poultry Husbandry and was open

(Continued on page 56)

FARM NOTES

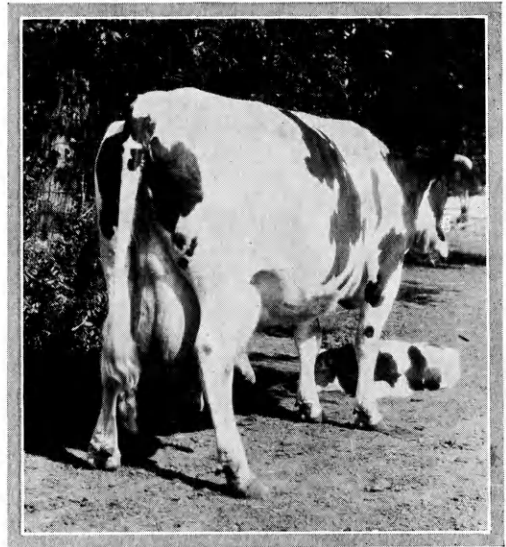
DORA PEARL VEEMAN, A CHAMPION

In this fast-moving generation of ours, it is no novel thing for records to be broken and champions to be crowned, but recently a new and outstanding champion has made its appearance in Kansas dairy circles. On September 28, 1929, Dora Pearl Veeman 631-969, an eight-year-old Holstein cow owned by H. A. Dressler, of Lebo, Kan., completed a yearly test in the Advanced Registry in which she produced 26,306.3 pounds of milk and 1,018.5 pounds of butter fat. This is the first 1,000-pound butter fat record ever to be made in Kansas and gives this wonderful cow a ranking with the best of the country. She is the 140th Holstein in the United States to produce over 1,000 pounds of butter fat in one year and one of the less than 250 animals in the world to perform this outstanding feat. Something of the quality of this accomplishment can further be gained by noting that the highest butter fat record ever made by an animal of any age and any breed is only 1,349 pounds.

This great Kansas cow not only made her record in Kansas but she was bred and developed in this state. She is out of one of the foundation cows of Mr. Dressler's herd and was sired by King Korndyke Veeman 7th, 222103, the first sire used by Mr. Dressler. This bull has left an indelible and valuable mark in the Dressler herd through the production of his splendid daughters. Five of them, including the new champion, have produced an average of 722 pounds of butter fat in 309 days on test and it is expected that they will produce an average of over 800 pounds of butter fat in their complete lactations.

Mr. Dressler has developed his herd of high-quality Holsteins from a foundation of five females and a bull. He has followed very conservative methods in his breeding operations and has insisted on only the best

throughout. The soundness of his policy is evidenced by the present high quality of his herd. The animals have been kept under the most ordinary farm conditions in so far as buildings and equipment are concerned, but the care that has been expended on them has been fully justified in the profits gained. The development of such a great producing herd as is found at Pinedale Farm is an outstand-



DORA PEARL VEEMAN

This pure-bred Holstein owned by H. A. Dressler of Lebo, Kansas, is the holder of the first 1,000-pound butter fat record ever made in Kansas.

ing accomplishment in breeding and herd building and will do a great deal to raise the standards of dairy cattle in Kansas. —H. J. Brooks, Instructor in Dairy Husbandry.

HOG MARKETING

The marketing of hogs during the month of December is usually rather unsatisfactory owing to the large numbers usually

marketed during this period. The marketing of a large portion of the spring crop about this time usually weakens prices. Past observation of the marketing situation indicates that the season's point of low prices for hogs is reached in December, though in poor corn years such as this, the point may be reached somewhat earlier.

After the season's heavy runs have been received, conditions would indicate a stronger market and improved prices. The visible supply for slaughter for the next twelve months is expected to be less than for the past twelve months, and this coupled with the small corn crop which has discouraged increased feeding, as judged from the small shipments of stocker and feeder pigs to country feed lots, should result in improved hog prices early in 1930. —George Montgomery, Extension Specialist in Marketing.

PASTURING WINTER WHEAT

A large proportion of the acreage of winter wheat in Kansas is pastured, although a very little is planted primarily for this purpose. In an average year the pasturing starts in November and continues until the middle of December or later, depending on growing conditions. More intensive grazing is again resumed in February or early March and in some instances the stock are left in the fields as late as May.

The grazing capacity of winter wheat varies with seasonal conditions. In very favorable years good stands may be pastured at the rate of four head per acre, while in extremely dry years little or no pasturing may be obtained. The average, taking one year with another, is possibly a little less than one head per acre.

Wheat pasture is highly palatable and nutritious. Recent analyses show that it has a feeding value almost as high as concentrated nitrogenous feeds, comparing in its early stages of growth very favorably with linseed oilmeal in protein content. It is also high in minerals, particularly in phosphorus, calcium, and iron, which greatly adds to its feeding value. Stock that run on wheat pastures will probably do better if they have access to a straw stack or are fed some roughage to better balance the ration.

The effect of pasturing on the yield of winter wheat depends largely on seasonal conditions. Recent investigations indicate that a vigorous growth of wheat is not injured by grazing but that grazing in the fall and very early spring may prove beneficial. Grazing may continue up to April 1 or 15 without injury provided growing conditions are favorable. However, it has been found that in years of drought grazing may greatly reduce the yield of wheat and in light soils it may be a factor in increasing soil blowing.

—A. E. Aldous, Professor of Agronomy.

KANSAS FARM MORTGAGE DEBT REDUCED

A recent report by the United States Department of Agriculture shows that Kansas reduced her farm mortgage debt more than any other state from January 1, 1925, to January 1, 1929. The total farm mortgage debt of Kansas was \$481,661,000 on January 1, 1925, and during the past four years it was reduced approximately \$35,000,000. During the same period the total farm mortgage debt of the United States increased more than \$100,000,000, totaling \$9,468,528,000 on January 1, 1929. —W. E. Grimes, Professor of Agricultural Economics.

CONDITION OF THE KANSAS WHEAT CROP

Reports from all over the state have recently stressed the excellent condition of the winter wheat crop. This condition seems to be quite general throughout the state. The crop was seeded this fall under almost ideal conditions. In most sections the soil worked down into a splendid seedbed with the minimum of working. Late rain and November snow supplied additional moisture. Over most of the wheat area of the state the crop made a very satisfactory fall growth and went into winter in excellent shape. —S. C. Salmon, Professor of Agronomy.

HOW SHOULD WE FERTILIZE WHEAT?

Although investigators have done much work in discovering the kind of fertilizers needed in Kansas for various crops, little has been done in determining the best methods

of applying these fertilizers. The greater part of the wheat in Kansas is not fertilized. In southeastern Kansas, however, it is not uncommon to find fertilizer applied in the row with a fertilizer drill.

During the last three years Dr. F. L. Duley, in charge of these fertilizer investigations in the Agricultural Experiment Station, has been running experiments in methods of fertilizer application to wheat. Small plats were put out, some of which were not treated, others

Thus the plats having fertilizer drilled in the row show a 7-bushel-per-acre increase over those having the fertilizer broadcast. Several larger plats planted in 1928 with a wheat drill having a fertilizer attachment showed practically the same rate of increase as was obtained with the smaller plats. This increase in yield due to the method of application may mean that much wheat land may be fertilized with profit where it has been considered unnecessary to use fertilizer.



WHEAT PLATS FERTILIZED WITH SUPERPHOSPHATE
Center—drilled in rows; sides—broadcast.

had superphosphate broadcast at the rate of 175 pounds per acre, while yet others had superphosphate drilled in the row at the rate of 175 pounds per acre. These plats were planted and harvested by hand. From the start the plants having the superphosphate drilled in the row were much more vigorous than either of the others. For the three years the plats which were not treated averaged 23.5 bushels of wheat per acre; those having 175 pounds per acre of superphosphate broadcast, 31.8 bushels per acre; while those having 175 pounds per acre of superphosphate drilled in the row averaged 38.8 bushels per acre.

Doctor Duley is continuing his work along this line with the idea of determining more definitely the most satisfactory methods for using fertilizer not only on wheat but also on other crops. —C. A. H., '31.

FEED NOW TO PRODUCE HATCHABLE HATCHING EGGS

The care received by a breeding flock of hens during the winter months will be reflected in the hatching trays at a later date. Although the hatching season is a few weeks away the person who expects his breeding flock to produce hatchable hatching eggs will see to it that the breeders receive all the es-

entials in a ration necessary to produce strong, vigorous germs; embryos that grow and develop to finally emerge from the shell with a bang.

Feeding correctly at this time will help to insure a high hatching per cent for the entire hatching season. Stinting the breeders now with a view of feeding correctly when hatching eggs are to be saved will not improve hatchability until late in the season, and early hatching results will be discouraging.

The following ration contains all the vital substances excepting sunshine necessary to promote health, to maintain body weight, and to encourage egg production:

Scratch Grain	
Cracked corn	200 pounds
Wheat	200 pounds
Dry Mash	
Ground corn	100 pounds
Ground wheat	100 pounds
Ground oats	100 pounds
Meatscraps	75 pounds
Alfalfa leaf meal	25 pounds

In the winter months, green feed is probably the most difficult to obtain for the breeders. The vitamin found in green leaves is absolutely necessary to maintain health. It is supplied in the above ration by alfalfa leaf meal. Yellow corn also carries this vitamin but not in large enough quantities to supply the needs of the breeders. Green leafy alfalfa hay placed in racks or wire baskets will take the place of alfalfa leaf meal in the above ration.

Feed breeders correctly now and then reap the benefits at hatching time—a hatching tray full to the brim with vigorous chicks.

—H. M. Scott, Assistant Professor of Poultry Husbandry.

LEGUME HAYS IN THE WINTER RATION FOR FATTENING CALVES OR PIGS

Some alfalfa or clover hay should be included in the ration for calves or yearlings being fattened for the market. In case legume hay is not available, good results can be obtained by supplying ground limestone or bone meal to the amount of one-tenth of a pound per head daily. A ration made up of all the silage and grain the calves will consume in addition to two pounds of alfalfa hay and one pound of cottonseed meal per calf

daily will result in satisfactory gains and market finish.

It is also advisable to feed alfalfa hay to pigs being fattened on corn and tankage in the dry lot. The best substitute for pasture during the winter months lies in good-quality, leafy legume hay. Pigs will eat sufficient alfalfa if good-quality hay is kept in a rack where they can help themselves at any time. It is not necessary that the hay be chopped or ground. —F. W. Bell, Professor of Animal Husbandry.

JUDGING CONTESTS

(Continued from page 43)

tion judging, and an examination over the American Standard of Perfection.

Each year the K. S. A. C. poultry judging team competes in the Midwest Intercollegiate Poultry Judging Contest in Chicago, one of the biggest and best supported contests in the country. The annual marketing tour sponsored by the Chicago Chamber of Commerce, the United States Egg Society, and others, making it possible to visit the Chicago Mercantile Exchange, the Chicago Poultry Board, and other marketing places of interest is of tremendous value to members of the poultry judging team.

The record of K. S. A. C. intercollegiate judging teams is one of which the institution is proud. Of course, they do not always win, in the usual meaning of the word. However, no college of agriculture can show a better record. The results of the past season are presented in this issue of the *Ag Student*. They are not unusual but rather an average showing. Outstanding scores and winnings are practically always present in a year's record. Further, in a large way, the contestants are always victorious, for the spirit of these contests is always the same. The contestants do their very best throughout and the results of such efforts have a marked influence on their subsequent careers.

Walter J. Daly, '25, county agricultural agent of Linn county, coached the state champion 4-H live stock judging team last fall. Walter was a member of the dairy judging team when a senior in college.

ALUMNI NOTES

DIRECTORY, CLASS OF 1929, DIVISION OF AGRICULTURE

FARMING

Name	Address	Further information
S. R. Bellamy	Meade	General farming
H. P. Blasdel	Sylvia	General farming
J. B. Brooks	Garrison	General farming
G. J. Caspar	Kansas City, Mo.	In charge of milk routes, Country Club Dairy
C. S. Channon	Ottawa	General farming
W. M. Crossen	Turner	Fruit and truck farm
M. K. Fergus	Garnett	General farming
W. E. Gregory	Portage, Wis.	Assistant shepherd, R. E. Richards farm
T. F. Guthrie, Jr.	Saffordville	Ranching
A. B. King	Kansas City, Mo.	Aines Farm Dairy
T. W. Kirton	Clay Center	Manager of Shadow Lawn Dairy Farm
L. W. Koehler	Fairmount Addition Kansas City, Mo.	Manager of poultry and fruit farm
W. H. Lee	Manhattan	General farming
M. G. Mundhenke	Lewis	General farming
H. M. Nester	Scranton	General farming
W. H. Polhamus	Parker	General farming
R. L. Rawlins	Holton	General farming
C. E. Russell	Stafford	General farming
M. L. Russell	Garden City	General farming
P. G. Sayre	Manhattan	General farming
R. T. Schafer	Jewell City	General farming
J. H. Sutton	Ensign	General farming
J. F. True	Perry	General farming
A. O. Turner	Lawrence	General farming
L. A. Will	Denison	General farming
R. R. Wood	Cottonwood Falls	Ranching

HIGHER EDUCATION OR RESEARCH

Name	Address	Further information
F. B. Alspach	Manhattan	Graduate Assistant in Agron- omy, K. S. A. C.
O. L. Buzard	Stillwater, Okla.	Assistant Horticulturist, Agr. Expt. Sta.
Norman Curtis	New Brunswick, N. J.	Assistant in Crops and Soils, College of Agriculture
F. W. ImMasche	Chicago, Ill.	Graduate student, Institute of Meat Packing, University of Chicago
S. G. Kelly	Manhattan	Graduate student, Department of Entomology, K. S. A. C.
R. O. Lewis	Manhattan	Assistant in Soil Survey, De- partment of Agronomy, K. S. A. C.
J. P. Lortscher	Chicago, Ill.	Graduate student, Institute of Meat Packing, University of Chicago
D. J. Martin	Chicago, Ill.	Graduate student, Institute of Meat Packing, University of Chicago
A. W. Miller	Manhattan	Graduate student, Department of Education, K. S. A. C.
T. F. Winburn	Manhattan	Graduate student, Department of Entomology, K. S. A. C.

COUNTY AGRICULTURAL AGENTS

Name	Address	County
O. W. Greene	Pratt	Pratt
R. L. Remsberg	Kingman	Kingman (County club agent)
J. W. Roussin	Atwood	Rawlins
I. K. Tompkins	Hoxie	Sheridan
L. M. Wolfe	Ness City	Ness

TEACHING VOCATIONAL AGRICULTURE

Name	Address	High School
S. S. Bergsma	Hill City	Hill City Rural
T. G. Betts	Ramona	Ramona Rural
F. A. Blauer	Lebanon	Lebanon
R. E. Bonar	Alta Vista	Alta Vista
Albert Brown	Powhattan	Powhattan
H. D. Garver	Merriam	Shawnee Mission Rural
W. W. Gosney	Byers	Byers Rural
Carl Heinrich	Americus	Americus Rural
T. E. Nafziger	Mullinville	Mullinville Rural
J. A. Watson	Howard	Howard

OTHER HIGH SCHOOL TEACHERS

Name	Address	Subject	School
F. E. Carpenter	Linn	Agriculture	Linn Rural
C. R. Curtis	Ellsworth	Agriculture	Ellsworth
R. E. Hamler	Council Grove	Coaching	Council Grove
H. K. Richwine	Morrowville	Agriculture	Morrowville Rural
J. F. Smerchek	Leroy	Coaching	Leroy

COMMERCIAL WORK

Name	Address	Further information
H. C. Abell	Kansas City, Mo.	Salesman, Aluminum Cooking Utensil Company
J. L. Blackledge	Lake Wales, Fla.	Landscape Gardener
E. D. Cannon	John Marshall Apt. Kansas City, Mo.	With Missouri Inspection Bureau, Fire Insurance
E. G. Champagne	Manhattan	Landscape Gardener, Kansas Evergreen Nurseries
T. J. Charles, Jr.	Chicago, Ill. 608 S. Dearborn St.	Public Relations, American Association of Farm Equip. Mfgs.
Edward Crawford	Oberlin	Manager Oberlin Roller Mills
T. R. Freeman	Linn	Assistant buttermaker, Washington Co. Coop. Creamery
Fred L. Huff	Clayton, Mo.	Landscape Gardener, Wilbur Nursery Company
P. B. McMullen	Stella, Nebr.	District Agricultural Agent, C. R. I. & P. Railway
J. A. Stewart	Manhattan	Clerk, First National Bank

The Mineral Nutrition of the Dairy Cow

W. H. Riddell

Assistant Professor of Dairy Husbandry

The dairy cow secretes approximately seven-tenths of a pound of mineral matter in every 100 pounds of milk. Only recently a Kansas cow completed a record of 26,000 pounds of milk in 365 days. In accomplishing this she gave off more than 180 pounds of mineral matter in the milk alone. The animal body normally contains about 4.5 per cent mineral matter of which four-fifths is in the skeletal framework. The cow in question weighed 1,500 pounds. Applying the foregoing figures, 57 pounds of mineral matter are found to be in the skeleton of this particular animal. It is thus evident that this cow in the course of making her record produced mineral matter in her milk to the extent of nearly $3\frac{1}{2}$ times the weight of that in

her skeleton. This is an exceptional instance, of course, but it serves to illustrate the tremendous draft that is put on the cow during heavy lactation.

Even the average cow of the Kansas Dairy Herd Improvement Association, producing an average of 8,000 pounds of milk in a year, gives off considerably more than her skeletal weight of mineral matter in the course of a year's production. Hence, it is apparent that if the ration fails to provide sufficient mineral matter or for some reason assimilation is poor, the cow must draw on the reserve in her bones, if production is to continue.

The fact that the dairy cow will continue to produce milk for some time without having sufficient minerals in her feed leads to

the question of the place of mineral supplements in the ration. Few topics in recent years in the field of dairy husbandry have given rise to as much discussion or stimulated as much scientific investigation. Yet it must be confessed that to date our knowledge of the subject is more or less fragmentary.

The lively interest in this question, however, largely on the basis of suggestion rather than direct evidence, has stimulated a flourishing business in mineral feeds. Almost any of the current farm journals contain several mineral feed ads with their flattering testimonials, featuring the wonder-working properties of each particular brand. This trade, fostered largely by present-day ignorance of the mineral requirements of farm animals, has already assumed an enormous volume and constitutes a new levy upon the agricultural industry.

The question then may reasonably be asked, Why this dearth of specific knowledge of the mineral needs of the dairy cow? A knowledge of these requirements would prove of great value. Several reasons can be advanced in explanation. For one thing, it has been assumed generally that there was a sufficiency of mineral matter in any ration that supplied the necessary protein and total nutrients. With milk preeminently a protein food, it is also natural that more attention should have been paid to the protein requirements of the cow.

Then again, any investigation of this kind offers certain difficulties. The mineral matter present in the feed is absorbed in the region of the small gut. However, it is also eliminated in this region and may be again absorbed and secreted, with the result that there is no method by which the per cent of mineral actually digested and retained can be determined. As a result, investigators in this field have recourse to what is known as the "balance trial." This furnishes a knowledge of the intake and outgo of the minerals under investigation. If, for example, a cow retains more of the calcium in her ration than is given off in the milk and excreta, she is said to be in positive balance and vice versa when the opposite condition holds true. Obviously, the desirable condition is to have the animal in positive balance as much as possible.

However, the mineral question is simplified by the fact that only five elements are ever likely to be lacking in farm rations. These are sodium, chlorine, iodine, calcium, and phosphorus. The first three may be dismissed without further consideration since no intelligent dairyman fails to provide his herd with salt (sodium chloride) and since there is apparently a sufficient quantity of iodine in Kansas dairy rations. There are areas, however, notably in the Great Lakes region and certain of the northwestern states, where iodine is deficient in the soil and crops and has proved a limiting factor in production.

This narrows the subject to a consideration of the calcium and phosphorus requirements of the dairy cow. These two minerals are the ones most likely to be deficient in dairy rations. Together they constitute about 85 per cent of the bone and about 90 per cent of the minerals of the body, while nearly 50 per cent of the minerals of milk are made up of these two elements. Their importance in the ration is consequently apparent.

The legume roughages are commonly thought of as being excellent sources of calcium, while concentrates such as wheat bran and cottonseed meal are rich in phosphorus. A ration containing these constituents, therefore, is usually considered adequate in respect to calcium and phosphorus. However, some 15 years ago, Forbes at the Ohio Agricultural Experiment Station started a series of balance trials with dairy cows, the results of which have since raised many questions in the minds of workers in this field and have stimulated a considerable volume of research on the subject. Using cows in all stages of lactation and at different levels of production on just such feeds as have been mentioned, in no instance in some 42 trials was he able to obtain a positive calcium balance.

Speculation immediately became rife as to the probable association between this lack of calcium retention, even in the face of abundant intake, and such conditions as breeding difficulties, lowered production following a previous heavy lactation, resistance to disease, etc.

A few years later the Wisconsin Agricultural Experiment Station was experimenting along similar lines using different types of

roughages in otherwise adequate rations. Here, for the first time, positive balances were obtained with high-producing cows fed green grass and alfalfa hay, which had been cured with as little weathering as possible. The calcium and phosphorus retention by the animal was most marked on the green grass feeding and, as the anti-rachitic vitamin was discovered about this time, it was held that the green plant tissue contained more of the factor responsible for mineral retention than dry hay. Careful curing of the hay also apparently assisted in retaining considerable of this factor, since alfalfa hay that had been exposed to the weather for several days was not nearly so efficient. Likewise, timothy hay in addition to being low in these minerals, evidently contains less of the vitamin than alfalfa, for even when supplemented with calcium and phosphorus in different forms, negative balances were the rule.

This work emphasizes the importance of pasture in the management of the dairy cow. It is here that she restores her depleted mineral reserves, and it is while on pasture that the feeding of mineral supplements in the ration will probably result in the greatest benefit. It also served to lend additional emphasis to the value of a legume hay in the ration. It is the best friend the dairyman has. It enriches his soil and promotes the health and production of his cows. No other crop that he can grow will yield him so lasting returns.

In Kansas considerable prairie hay, cane hay, corn fodder, and roughages of like quality are fed to dairy cows. Even though fed in balanced rations, if the roughage is too exclusively of this character, good dairy cows must deplete the mineral reserves in their bones to a great extent. If this condition obtains year after year with little opportunity for the cow to restore these losses, there certainly must be a pronounced effect on production and the well being of the individual. If good pasture is available and a mineral supplement supplied, the condition is rendered more favorable.

There is still plenty of scope for a great deal of investigation in this field. For one thing the mineral balance trials in the past have been of brief duration—10 days has

been the customary length. A picture is necessary of the mineral balance situation as it applies to the dairy cow, over whole lactations, yes, even involving the lifetime of the individual. At the present time the tendency is to plan work with these objects in view. Each passing year should see valuable additions to the knowledge of this present rather obscure field of animal nutrition.

STUDENT POULTRY JUDGING CONTEST

(Continued from page 48)

to all students regularly enrolled in K. S. A. C.

Eighty-seven students competed for honors, making the contest the largest student poultry judging contest ever held in K. S. A. C. Fifty-eight dollars in cash was awarded as prizes, besides the gold, silver, and bronze medals which were awarded by the poultry club for the three highest individuals.

The contestants judged six classes of production and two classes of exhibition birds. The latter group was a new feature of the contest and replaced the written examination over culling and judging.

The awards and scores of the 15 contestants at the top were as follows:

	Score	Prize
E. H. Johnson	720	\$10 and gold medal
R. G. Frye	720	8 and silver medal
Lawrence D. Morgan	705	5 and bronze medal
Paul A. Mears	695	3
Robert Phillips, Jr.	675	3
E. S. Schultz	675	3
Edward W. Wilson	675	2
Lloyd E. Wildman	675	2
E. M. Leary	670	2
T. D. Dicken	670	1
H. M. Overbey	665	1
W. M. Newman	665	1
Neil Durham	660	1
Dale Suplee	660	1
D. D. Doty	660	1

One dollar was also given to each of those ranking from sixteenth to twenty-fifth and fifty cents to each ranking from twenty-sixth to thirty-third. Ties were broken by giving advantage to the one placing the greatest number of classes correctly.

J. H. Kirk, '28, is operating a farm and also managing a grain elevator business in partnership with his father at Scott City, Kan.



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In the days before electricity on the farm, breakfast meant continual trips to and from the kitchen range. Now, with Hot-point electric aids, anything from coffee to ham and eggs can be prepared right at the table.

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electricity consumed.

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



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THE PEACOCK OF THE PRAIRIE

(Continued from page 39)

rural population, as many eggs and birds may be destroyed under these circumstances.

South Dakota today enjoys the reputation of having the best stock of pheasants in the country, both in number and quality. They were able to gain this reputation by the hearty cooperation of the people and with less than \$20,000 invested in stock birds. The pheasant was first introduced into South Dakota in 1912 when about 300 birds were released by the game department. When the program was finally complete, some 7,000 birds had been liberated. From this stock it has been estimated that three to four million pheasants were taken by licensed hunters in 1928.

Many farmers object to the pheasant because they believe he eats young sprouts, considerable corn, and is a pest around the farm place. Where they are allowed to become too numerous they may become, in some instances, destructive to newly planted or young grain. However, pheasants which have been "posted" during different seasons of the year have been found to live mostly on seasonal bugs and worms and also consume large quantities of weed seeds, such as sunflower seeds and pigeon grass. This good trait, in nearly all cases, far overshadows the little destruction which he may do.

The pheasant is undoubtedly one of the country's best table birds and surely the most beautiful of all game—truly the peacock of the prairie. It is apparent that the pheasant

lacks some of the traits of the prairie chicken or the quail in that he refuses to hold well for a dog. Yet when we bear in mind that we are now drifting toward highly developed agricultural communities where the high-powered bird dog and the large areas of unfenced and uncultivated lands are a thing of the past we must recognize this trait as a desirable characteristic. Those who are inclined to feel that the pheasant is not a game bird will, after a hunt, be quite willing to admit that the pheasant is the gamest of fowl and one which may be hunted without a dog.

In many foreign countries, the conservation of game is a part of a national program with game considered a substantial source of meat as well as a means of recreation for its people. The meaning of the word conservation in the sense in which it has been used is misunderstood by many to mean "hoarding." This is far from its true meaning. Conservation means conserving while using, but not disuse. The question now arises, does the United States have a program which will restore our constantly decreasing stock of game, especially on the prairie? The decreasing stock of game, together with our ever increasing population, makes the problem of restoration and conservation an important one. Here is opportunity for the citizens of Kansas to cooperate in a restoration program of a prairie fowl which will furnish much food and an unlimited amount of recreation.

UNDULANT FEVER

(Continued from page 38)

will make milk from an abortion-infected herd safe for human consumption, but the shortcomings of milk which has been pasteurized must be kept in mind. Pasteurization makes no provision to safeguard the dairyman or the handler of milk, nor does it avail in preventing undulant fever in the packing-house employee and no inconsiderable number of cases of this disease have been reported from this group of men.

It is becoming more evident every day that a dairyman cannot afford to tolerate abortion disease in his herd, particularly when efficient, reliable means for its eradication are at hand.

The 1929 American Royal Live Stock Show

Bruce R. Taylor, '31

The 1929 American Royal contributed the brightest page in the history of that great show during its 31 years of progress. Whether you consider the number of animals exhibited and the high quality of the individuals in the different herds; whether you consider the keen competition in the showing between the greatest of sires and the most renowned dams, and progeny of these great sires and dams; or whether you think of the all-time records established in the sales of fat steers and fat lambs, or in the remarkable sales of pure-bred cattle of the beef breeds; or whether you consider the wonderful showing made by the farm boys and girls in the Royal 4-H Club conference and national congress of vocational students, you are impressed with the magnitude of the livestock industry and with the value and importance of such a great show as a concentration center for the superior animals of the different breeds and classes of live stock.

The importance of and appreciation of such a show were made evident by the record-breaking attendance on Kansas and Missouri days, and at the night horse shows where the greatest light horses in the world competed for the coveted honors of the show.

The education obtained by the alert college student, who is interested in live stock, at such a show is beyond estimation. The privilege of seeing the best specimens of each breed of live stock helps the student to choose his favorite breeds and form standards of perfection as to type in his own mind. He will learn about methods of feeding, fitting, showing, and judging that are perhaps new to him, and taking it all in all every visitor should come away from the Royal with a better appreciation and greater love for live stock and a keener interest in agriculture as a whole.

K. S. A. C. is favorably situated in being so close to the American Royal and it is well that so many students avail themselves of the opportunity to see this show, which is second only to the International and surpassed by the International only in certain respects.

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The Horticultural Meeting

Arthur Meyer

Graduate Assistant in Horticulture

Many Kansas fruit growers met in Atchison Memorial Hall, Atchison, Kan., on December 4, 5, and 6, 1929, to strengthen their campaign for more, bigger, and better apples. This was the sixty-third annual meeting of the Kansas State Horticultural Society, and it was held in conjunction with the Missouri State Horticultural Society and the Missouri Valley Horticultural Conference.

Professors and extension specialists of the Kansas State Agricultural College filled important places on the program. Dr. F. D. Farrell, president of the college, addressed the conference on "A New Deal in Agriculture." Prof. R. J. Barnett, head of the Department of Horticulture and president of the Kansas State Horticultural Society, presided the first day. Later on the program he told of the virtues of vetch as a cover crop. Prof. William F. Pickett, with the help of Prof. H. G. Swartwout of the University of Missouri, presented the "Proper Use of Spray Equipment." Dr. Martha M. Kramer, of the Division of Home Economics, exploded the idea that apples are a luxury when she told of the "Food Values of Missouri Valley Fruits." Prof. George A. Dean of the Department of Entomology and Dr. H. B. Hungerford of the University of Kansas, presented addresses on entomological phases of horticulture and Dr. O. H. Elmer of the Department of Botany and Plant Pathology reported on diseases in Kansas nurseries. Prof. H. P. Gaston, '23, now located at Detroit, Mich., discussed roadside markets.

Whenever one forms the opinion that the apple growers in Kansas do not know their apples, he had better guess again. H. L. Lobenstein, extension horticulturist, and W. G. Amstein, county horticultural agent in Atchison county, conducted a fruit growers' apple-judging contest and found that the producers are no slouches in selecting the best specimens. F. H. Hagenbuch, '28, was high man. Professor Pickett's student judging team competed with Professor Swartwout's team from Missouri to prove that there will later be no dearth of competent fruit judges.

The Kansas team won by a score of 8,725 of a possible 8,900. The Missouri score was 8,555.

Prof. L. C. Williams, extension specialist, and W. R. Martin, extension horticulturist in Missouri, who formerly held that position in Kansas, demonstrated the proper procedure in pruning young fruit trees. Demonstrations of sizing machines, fruit washing machines, packing, and spraying were given by the exhibitors.

Those in attendance came from Iowa, Nebraska, and Arkansas, as well as from Kansas and Missouri. Speakers from other states on the program and their subjects were as follows: Dr. E. C. Auchter, Washington, D. C., "Factors Concerned with Profitable Production of Fruit;" Dr. A. J. Ackerman, Bentonville, Ark., "The Codling Moth Situation;" and Mr. James O. Clarke, Chicago, Ill., "The Spray Residue Problem;" all of the United States Department of Agriculture. Prof. T. J. Talbert, "Horticulture," and Dr. A. E. Murneek, "Pollination of Apples," both from the University of Missouri, Columbia, Mo. Dr. H. W. Anderson, University of Illinois, Urbana, Ill., "Control of Bramble Diseases." Mr. Paul Stark, "Apples for Health" and Mr. D. E. Lewis, "Stationary Spray Plants," both of Louisiana, Mo.

The Donison Apple Growers' Contest, the original and only apple growing contest in America, has been conducted under the supervision of the K. S. A. C. Extension Service assisted by the Department of Horticulture. The prizes for the year were awarded at the convention banquet of which Prof. L. C. Williams was toastmaster. Walter Braun, of Atchison, won sweepstakes in this derby.

J. L. Minor, one of the seniors of the Division of Agriculture, died suddenly of heart failure without warning Monday evening, November 18, 1929. In the picture showing "One of the Try-Outs for the Senior Live Stock Judging Team" Mr. Minor is holding the head of the third ram from the left.

SELLING ADVANCED

OUR forefathers on the farm had meager sources of agricultural knowledge to draw on. Local practice and experience guided them. The farm machines available were simple and few.

AGRICULTURE

Tremendous changes have taken place since then. Farming has become more complicated—more industrialized. The farmer's qualifications and requirements to successfully engage in modern farming are infinitely higher.

Fortunately the progress in the science of agriculture and agricultural engineering has more than kept pace.

Never before has there been so much knowledge and so many facilities available which might be used to improve farm methods and profits. The real opportunity in agriculture today is to apply this knowledge and these facilities. The big job today before farm leaders is to sell this advanced agriculture in order that the largest number of farmers may share in its benefits.

New standards in mechanical perfection and higher efficiency in farm machines are constantly being achieved. The possibilities of the modern tractor, combine, disk plow, and other new machines are so revolutionary that it amounts to no less than a new system of farming.

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Hybrid Vigor and Sex-Linkage in Poultry

W. P. Albright

Graduate Assistant in Poultry Husbandry

By hybrid vigor is meant a stimulation or increase, for instance, in the rate of growth or egg production. It is added vigor secured by crossing two breeds, the offspring showing greater vigor than either of the two breeds crossed. It lasts but one generation and hybrids themselves cannot be used as breeders. Sex-linked inheritance is the transmitting of certain characters by the male parent to his daughters and by the female parent to her sons. It is "criss-cross heredity." By means of this, sex may be distinguished in chicks at time of hatching. An example of this is to be found in chicks resulting from crossing a Rhode Island Red male on a Barred Plymouth Rock female. The male chicks have a white head spot and female chicks are black.

Hybrid vigor and sex-linkage are receiving a great deal of attention today by poultrymen in many parts of the world. Probably more attention is paid to sex linkage in England than elsewhere. Parkhurst reports that many commercial poultry farms in England have only sex-linked pullets. Hatcherymen in the United States are now beginning to turn to the production of hybrid chicks, reporting that very gratifying results are being obtained by their customers. The rates of growth and egg production of the hybrids are proving to be greater than that of many pure breeds.

The Department of Poultry Husbandry of K. S. A. C. has several experiments in progress at present involving hybrid vigor and sex-linkage. One of these is a Rhode Island Red by White Leghorn cross. The object of this experiment is not only to measure the stimulation obtained as expressed in hatchability, livability, rate of growth, and egg production of the hybrids, but also to compare the reciprocal crosses of the two breeds used. An additional object is to ascertain whether the production breeding behind the individuals selected for the mating will influence the egg production of the hybrids.

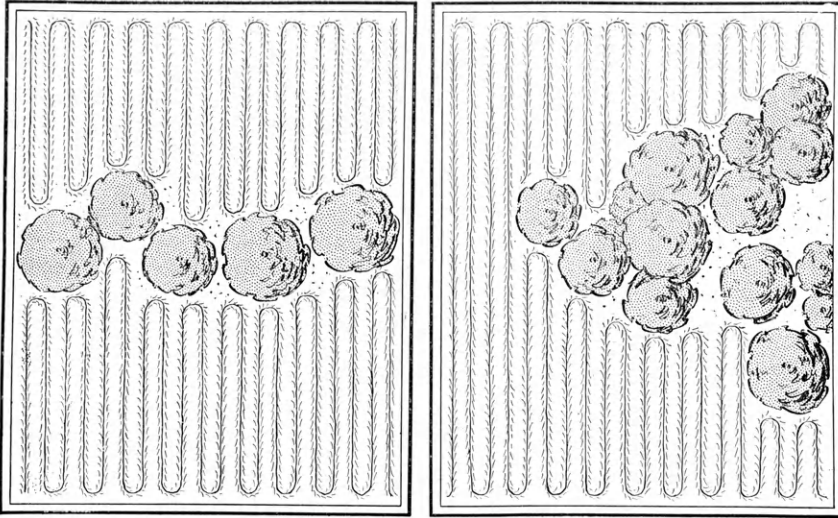
Two distantly related strains of White Leghorns have been crossed also to determine whether there is any stimulation to be had by making a distant cross within the same breed. Crosses made both ways are being compared with each pure strain. For comparing hatchability, early mortality, and rate of growth, over 1,600 chicks were used, and 450 females are being trapnested for comparing production tendencies.

A study is also being made of hybrid vigor resulting from crossing Rhode Island Reds, Barred Plymouth Rocks, and White Leghorns. All three breeds were crossed on each other, the crosses being made each way. The chicks from these matings are being compared with the pure breeds and, of course, with each of the crosses. Mortality, rates of feathering, and rates of growth until broiler size are the factors under observation. At hatching time, where possible according to the cross, the sexes were separated by means of head spot, color, and length of primaries.

Some time ago Jersey Black Giants were crossed with White Leghorns, both crosses being made. The hybrids were compared with the pure Leghorns and Giants as to rate of growth, hatchability, and mortality. The hybrids hatched better, grew more rapidly, showed a low mortality, and produced better than did either of the pure breeds.

This year the highest producing birds at the poultry farm are hybrids. This fact deserves a great deal of attention for it illustrates one of the results of hybrid vigor.

Dr. D. C. Warren, poultry geneticist, gives several possibilities of making crosses in order that sex may be distinguished at time of hatching. Barred Plymouth Rock females mated to males of any breed except White Leghorn will produce barred males and females largely black. Rhode Island Red males crossed with breeds carrying silver, as Silver-laced Wyandotte, Columbian Rock, or Light Brahma, will produce female hybrids similar to Rhode Island Red females but showing



How would YOU clear these fields?

A FARMER had two fields that were hard to cultivate. As shown above (on the left) because of a row of trees that cut the field in half, the farmer made four instead of two turns to the furrow. The row of trees occupied a rod of ground. In the other field (on the right) a point of wood-lot extended into the field making plowing and cultivating difficult. This wooded point accounted for about three and one-half acres. Less production and more time and labor required! How would you clear these two fields?

Obviously the only way to straighten out these fields was to get rid of the row of trees and the wooded point. And probably blasting is the cheapest, quickest, easiest way. But just how would you go about it? How would you plan the shots; how would you load them; fire them and clear away?

The correct answers to these and other field-clearing problems are given in the pages of "AGRITOL for Land Clearing." This free booklet contains text, diagrams and illustrations about using explosives for field clearing. Mail the coupon for this helpful and practical booklet.

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varying shades of red. The males will be similar in color to the Light Brahma. If the cross is made the opposite way, both sexes will show the Light Brahma pattern. The cross of any buff or red male to breeds in the silver group will result in female chicks with down much like Rhode Island Reds and males for the most part of a creamy white down color. Buff or Brown Leghorn males mated to any of the silver breeds just mentioned will result in gold females and silver males.

There are many practical possibilities in this branch of the poultry industry. The hatcheryman who produces hybrid chicks, the sex of which can be distinguished at hatching time, can command a premium for his chicks. The poultryman who makes a specialty of broiler production is interested in the most rapid growing chicks. He is willing to pay a premium for the male chicks, for they grow more rapidly than females and he can produce broilers at a lower cost than if both males and females were used. When stimulation from hybrid vigor is present, the chicks grow even more rapidly.

The poultryman who makes a specialty of egg production is interested primarily in future egg producers. He is willing to pay a premium in order to secure females only. He is thus not troubled with the raising of the males; his work is lessened; and he may at the same time raise more pullets than if he had to buy and raise both males and females to get his layers.

KANSAS WHEAT-BELT PROGRAM

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or 87 per cent of the 1928-'29 Kansas wheat crop. The plans made at this conference provide for a series of four state-wide campaigns. The first of these campaigns is a series of thirteen two-day district schools to be held during January and February at Wichita, Kingman, Pratt, Ashland, Dodge City, Sataunta, Great Bend, Salina, Mankato, Dighton, Norton, Hays, and Colby. The district schools will be attended by farmers who have been selected as project leaders and county agricultural agents from surrounding counties. These delegates will return to their counties and give this information to their communities through county schools, community meet-

ings, personal contact, and demonstration.

This series will be followed by ten district grain-grading schools to be held for elevator managers by the Kansas State Agricultural College cooperating with the federal and state grain inspection departments. These meetings will be held at Dodge City, Great Bend, Wichita, Salina, Smith Center, Hays, Colby, Hutchinson, and Dighton. Grain grades, grading factors, grain inspection, and "The Wheat-belt Program," will be the subjects discussed.

In June the farmers of the various counties will have an opportunity of seeing the results of methods advocated, in demonstrations on field test plats in their own counties. These field meetings will be conducted by the Division of College Extension and the county farm bureaus.

The climax of the year's activities will be the agricultural trains to be run over Santa Fe and Rock Island railroads in July and August. These trains will carry exhibit pertaining to each of the phases of the wheat-belt program, and a home economics exhibit showing the need of a conveniently arranged kitchen. Specialists on all of the phases of the program will accompany the trains to answer questions. The trains will make stops in all the counties of the wheat belt reached by the lines of these two railroads.

The results given for the first four years of the Kansas five-year wheat-belt program certainly show that the program is worth while. Prospects are good for the fifth year to be the most successful period of all and to bring to a close a program that Dean H. Unberger of the Division of College Extension has said is one of the greatest agricultural improvement programs in the United States.

THE AGRICULTURAL MARKETING ACT

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Its outcome can be known only with the passage of time. However, it behooves everyone interested in agricultural improvement to give the board the fullest and heartiest cooperation he can conscientiously render. Such cooperation will help insure that the hope for improvement will be forthcoming.

S. S. Hoar, '28, is county agricultural agent of Barton county, Great Bend.

