A black and white photograph of a snowy field. In the foreground, there are several small, bare bushes and a wire fence with a wooden post. The ground is covered in snow, and there are many footprints scattered across it. The background is a bright, overexposed area, possibly a field or a road. The title "The KANSAS AGRICULTURAL STUDENT" is printed in a large, serif font at the top of the page.

# The KANSAS AGRICULTURAL STUDENT

VOL. V. No. 2 DECEMBER, 1925  
MANHATTAN, KANSAS

Walter E. Moore

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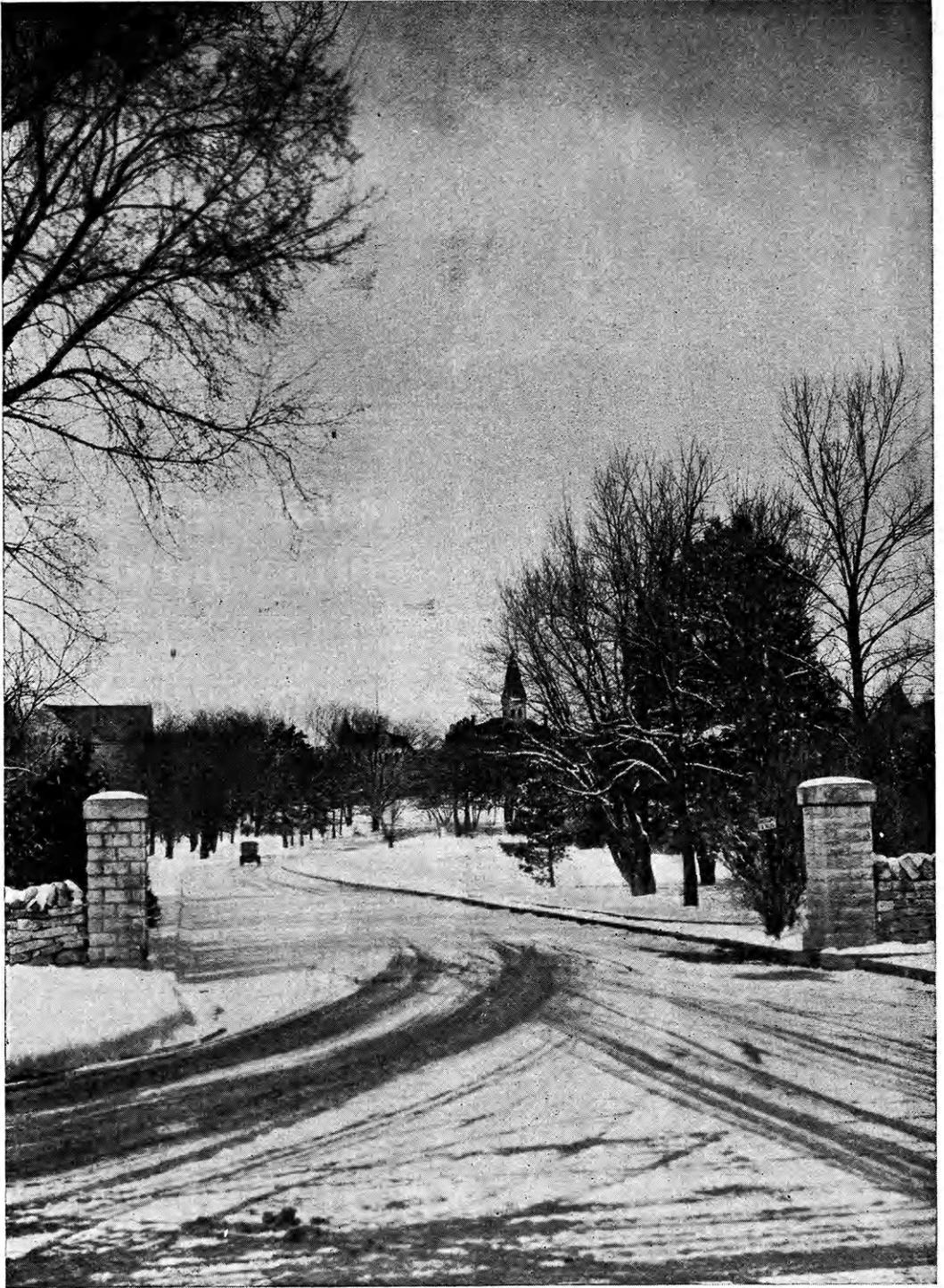
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A Typical Kaw River Scene

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East Gate to the College After a Light Snow

# The Kansas Agricultural Student

VOL. V

Manhattan, Kansas, December, 1925

No. 2

## The Menace of the European Corn Borer

Geo. A. Dean, *Entomologist*  
*Agricultural Experiment Station*

The European corn borer, which probably was introduced into this country in broom corn imported from Hungary in 1910, was first discovered infesting sweet corn in the vicinity of Boston, Mass., in 1917. During the summer of 1919, infestations were found in growing corn in eastern New York, near Schenectady, and western New York, in the vicinity of Buffalo. In the summer of 1920, infestations were discovered along the Lake Erie region of Ontario, Canada, and in 1921, the insect was found in small numbers throughout a narrow strip of territory comprising most of the townships bordering on Lake Erie in the States of Pennsylvania, Ohio, and Michigan. In spite of the drastic measures taken by the states and the United States Department of Agriculture, the infestation has increased in intensity and has made a natural spread, due to the flight of the moths, until at the present time (October, 1925) the insect occurs throughout a strip of territory varying from 40 to 100 miles wide in the Lake Erie districts of Pennsylvania, Ohio, Michigan, and Ontario.

The Canadian infestation, which, in 1923, seemed to be fairly under control, broke out in 1924 with renewed intensity, and some fields in Essex and Kent counties showed a commercial loss of from 15 to 20 percent. During the summer of 1925, the intensity of this infestation increased to alarming proportions, and in Essex and Kent counties, which comprises the principal dent corn growing districts of Ontario, crushing losses occurred over an area of about four hundred square miles. In a great many fields, the commercial loss was from 60 to 85 percent, and in some fields it was 100 percent. The crop in these

particular fields was not even fit for silage.

Prof. Lawson Caesar, Provincial Entomologist of Ontario, gives a vivid description of the injury in Essex and Kent counties. He states that "in an area in Essex and Kent, about twenty miles long by twenty wide (four hundred square miles), nearly every field of early corn this year (1925)—and most of the corn was early—has been almost totally ruined. Most of the fields have an average of over twenty borers to a plant. In these fields, practically every tassel has been broken off; every leaf has been killed and either fallen or hangs close to the stalk; the ears have broken down, about one-third of them have rotted, the remainder are stunted and most of them riddled by the borers; the stalks are punctured by borer holes, have numerous castings on the outside and are tunnelled on the inside in all directions. The result is that almost every plant has died long before it was mature and many of them have broken over, thus forming a tangled, filthy mass almost worthless as food for cattle and fit only for hogs to run in and feed upon whatever ears have escaped destruction. No one who has seen these fields can doubt that the borer is a terrible menace."

In speaking of the prospects of the future for the corn growers in Ontario, Prof. Caesar says: "All that need be said is that there is every reason to believe that the insect will continue to increase rapidly in the future and no reason to believe nature will come to our rescue and control this imported pest as she does our native insects. All the evidence indicates that unless the farmers act together, each man doing his share, the corn

industry of the province will ultimately be ruined."

This tremendous increase in the intensity of the infestation in Essex and Kent counties, together with the crushing loss to corn growers, has all taken place within the last two years. In the season of 1923, there was absolutely no commercial injury in the dent corn fields of these counties. The infestation was less than one-fourth of 1 percent of a stalk infestation. Since the climatic conditions favorable for maximum yields of corn are also conducive for a rapid increase of the European corn borer, and since within a

DISTRIBUTION OF  
EUROPEAN CORN BORER  
NOVEMBER 1ST 1925



#### Areas of Infestation

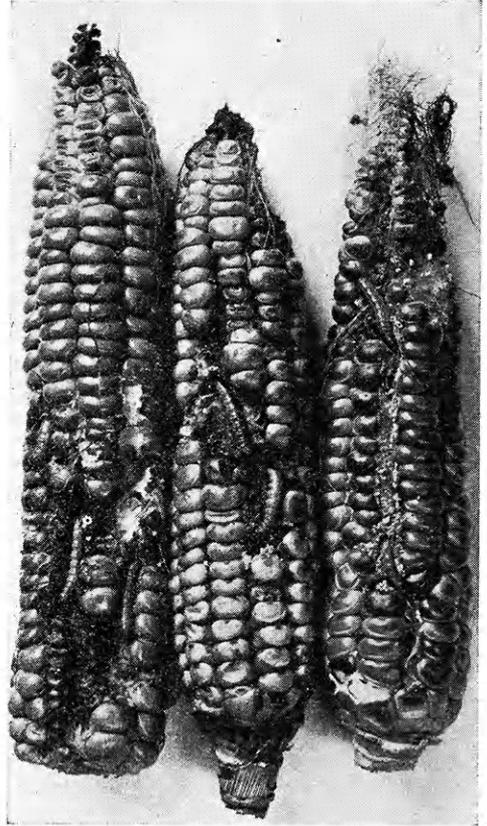
The above map shows the areas of infestation of the European corn borer in North America as known November 1, 1925. The heavy black shading is the spread for the season of 1925. (After the Bureau of Entomology, United States Department of Agriculture.)

period of two years losses amounting to more than \$2,000,000 have been experienced by the growers in Essex and Kent counties, is it unreasonable to assume that when the European corn borer becomes distributed throughout the great corn belt states, that similar losses in some years may be had in five hundred or more counties.

Those who are familiar with the habits of this insect and have observed the severe losses to dent corn in Ontario, are satisfied that it is an insect of tremendous potentialities and ranks as one of the most important pests that has become established in America. Threatening as it does the great corn crop of this country, upon which depends the great live-

stock industry, the situation presents a national problem that calls for the keenest knowledge of the scientist, the wisest judgment of state and government officials, and the best cooperation of the farmers and truck growers.

The favorite food plant of this insect is corn, including sweet, dent, and pop corn.



Borers Feeding on Immature Ears of Field Corn

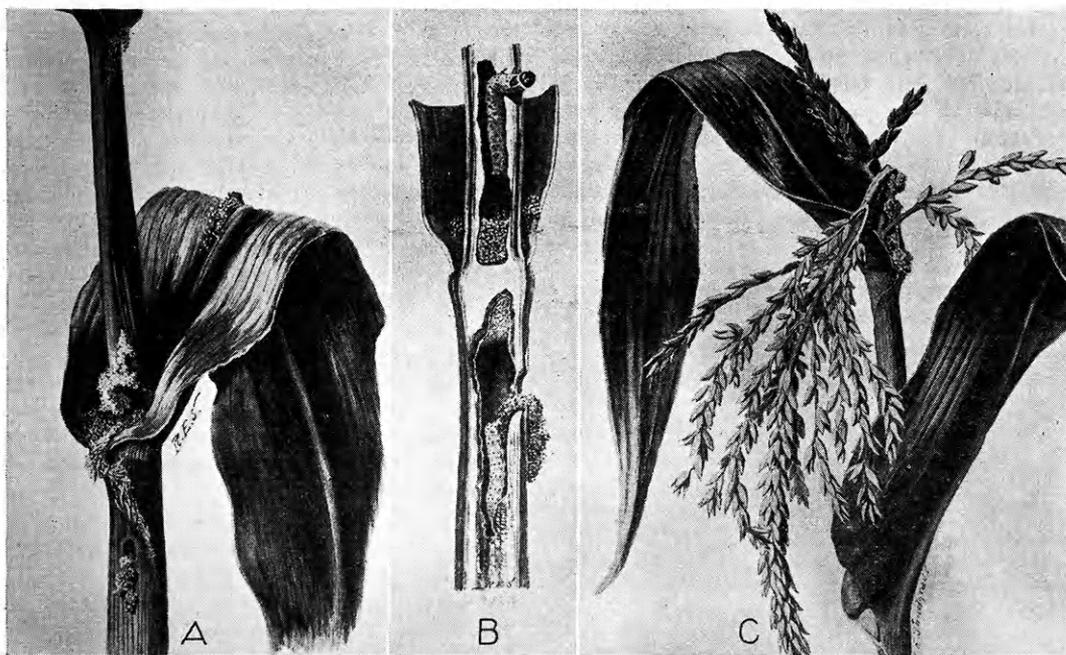
The picture shows typical injury by the European corn borer which are shown feeding in natural position. The interior of the cobs are also badly tunneled by the borers. (After the Bureau of Entomology, United States Department of Agriculture.)

However, from what is already known of its feeding habits, it would seem that there is hardly any succulent annual plant in which it will not live, for it has now been found infesting more than two hundred species and varieties of plants in the United States. If the insect becomes established in the districts where the sorghums are grown extensively, very probably it will become a limiting factor

in the production of this crop. There are also good reasons to believe that it will attack cotton, wheat, cowpeas, and other cultivated crops.

The larva of the European corn borer is about one inch long, dirty white in color, with a brown head. In the Lake Erie region, it passes the winter as a full-grown worm within the corn stalk or ear, or in case of weeds, within the stem or stalk of the plant. It resumes activity in the spring and in June it

within two or three days they bore their way into the main stem of the plant. The most serious injury is caused by the larvae burrowing in stalks and ears. The borers also tunnel within the tassel, the shank of the ear, and the midrib of the leaves. As the borers become larger, their burrowing within the stalk, particularly within the tassel, so weakens the stalk that it frequently breaks over. Such broken tassels, with the extrusions of yellowish frass or sawdust-like material at the



**Evidences of the Work of the European Corn Borer**

(A) A portion of cornstalk showing characteristic evidence of infestation. Note the extrusion of frass. (B) A typical longitudinal section of a cornstalk badly tunneled by the larva. (C) The broken tassel, a very characteristic sign of infestation. (After Bureau of Entomology, U. S. Department of Agriculture.)

bore its way to the surface of the food plant where a slight hole is made, which is to serve as an exit for the resulting moth. The larva now forms a cocoon in the burrow, passes into the pupal stage, and about the last of June the first moths appear and emergence continues throughout July.

The female moths each deposit from 300 to 700 whitish eggs in small clusters on the underside of the corn leaves. In from five to seven days the eggs hatch and the young larvae at first feed on the tender leaves, the tassel buds, the husks and silk of the ear, but

broken places, are the most conspicuous signs of infestation in growing corn. The extrusions of the yellow frass are also frequently noticed at various places where the larvae enter the stalk, midrib, and other parts of the plant. Counts made in badly infested corn fields frequently show from 80 to 95 percent of the tassels broken.

The borers enter the ears either directly through the silk and husks or through the shank. Here they feed upon the grain or tunnel through all parts of the cob and shank

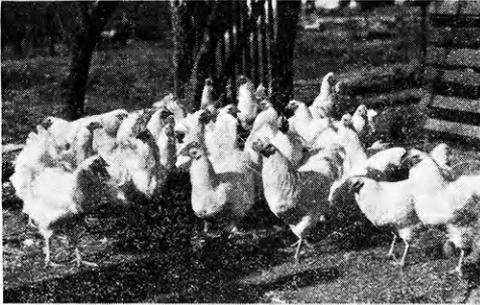
*(Continued on page 64)*

# Capons for the Table

G. T. Klein, M. S., '26

In these days of better-quality products it is rather surprising that a larger portion of surplus male chickens are not converted into capons. The successful farmer does not allow the bull calf to grow to maturity without castration or the young boar to develop into a stag. Neither does the successful poultryman allow his surplus cockerels to lose their better meat qualities by becoming staggy.

The Plymouth Rock, Wyandotte, Rhode Island Red, and Orpington breeds furnish a majority of the capons. However, they furnish only the medium-sized capons, ranging from seven to ten pounds at eight months of age. If a heavier bird is desired the Light Brahmas or Jersey Black Giants are to be preferred.



A Bunch of Capons

The location of the reproductive organs within the body cavity of the cockerel has given many people the idea that caponizing is difficult and that the loss from the operation is great. This is not the case, however. The average person with a little practice should not lose over 5 percent of his cockerels by caponizing. The proper time for the operation is when the birds weigh one and one-fourth to one and one-half pounds, which is from eight to ten weeks of age.

The male bird, after being caponized, loses his masculine appearance, becomes docile, shows no longer the disposition to fight, and is much easier to keep in large flocks. The comb and wattles cease to grow and the hackle and saddle feathers become long and silky. The

true capon seldom crows but if the operation is incomplete slips develop. The slips will crow and show a development of comb and wattles. They do not bring capon prices on the market and should be disposed of as soon as noticed.

As a result of its quiet nature the capon grows into a larger and better rounded out bird. It is perhaps somewhat temporarily stunted by the operation but is able to make about a parallel growth with the cockerel until the latter begins to take on sexual characters. From this time on the capon makes far the more rapid gain of the two, and at eight months of age the capon should weigh one to two pounds more than a cockerel of the same age. The difference in the quality of the flesh of the capon and the cockerel is quite marked. The cockerel never becomes fat. The muscle fibers enlarge and the flesh is filled with connective tissue making it practically unfit for table use. On the other hand the capon puts on fat evenly, the muscle fibers remain soft, and the bird produces meat that for taste and desirable table qualities is practically unsurpassed.

The capon may be fed the same ration as the other birds on the farm during the growing season, but should be given a short fattening period immediately before slaughtering. There are two methods of fattening, the crate or milk-feeding method and the pen feeding method. The former consists of confining the birds to a fattening crate and feeding a ration composed largely of cornmeal and shorts or oat flour moistened to the consistency of a thick paste with buttermilk or skim milk. The average length of feeding period will range between ten days and two weeks, depending upon the appetite of the birds. The latter method consists of confining the birds to a pen for a period of four or five weeks and feeding grain and mash by the hopper method. This ration also should consist largely of corn.

If the birds are to be of the highest quality the fat must be distributed throughout the muscle fibers. This can be accomplished best

by the crate or milk-feeding method of finishing the birds. Pen fattening frequently results in the depositing of fat under the skin and in the abdomen. Here it has no value in making the flesh more tender or improving its flavor.

Whether capon raising should become extensive in the Central States will depend entirely upon market conditions. If a special city market can be provided such that the local buyer can afford to pay the premium for capons that the quality of capon meat justifies, caponizing may become a more universal custom among poultry raisers. A large portion of surplus cockerals will then be disposed of in this way rather than by selling them at the broiler stage.

Regardless of whether or not raising capons is carried on as a commercial undertaking, a few capons should be raised annually for home consumption. When once the housewife is familiar with the superior eating quality of the meat of the capon, the high price or the scarcity of turkeys will give her little concern in planning winter dinners.

### Meats: On the Hoof—To—Across the Block

R. H. Perrill, '26

The practical experience of killing, dressing, and curing meats is offered in the meats course in K. S. A. C.

Usually the class judge their animals before killing and in this way one becomes accustomed to judging on foot for condition, finish, covering, and quality the very things to be looked for in the carcass.

This work is done by the students in a well-equipped shop, every man handling his own animal from start to finish. One can't rely upon some one else. From the scalding vat (in the case of hogs) to the cutting in halves ready for the cooler it's up to you—although at all times the instructor's aid will guide you.

Following the cooling the carcass is further divided into its separate cuts, a process which when rightly done gives no trouble though it requires some knowledge of the bony make-up of the animal. Identification of these separate parts, a little later, often gives the instructor (Prof. D. L. Mackintosh) a chance for a good laugh while at the same time it ac-

quaints the student with the various cuts of meat as they appear on the butcher's block.

Various methods of curing, such as, salting, pickling, and smoking are used, although for the most part the meats are sold fresh. In connection with the rendering of lard the manufacturing of soap, from waste fats, is required.

A careful study is also made of the differences of quality found in the various cuts of meat, making it easy to recognize the cuts and the quality of meat as they appear in the butcher shop.

Demonstrations are often given to student classes not taking this course; to those in attendance at Farm and Home Week; and to high school teachers of vocational agriculture.

Only ten or fifteen years ago the housewife was confronted, upon reaching her grocery store, with the problem of selecting her provisions from ungraded products. Today most of those same products have been brought under definite standards and she no longer buys without specifying the brand and grade of product which she knows will be what she wants.

Good it is that this standardization has come—but meat is one thing which is still bought upon a scales basis with little or no attention being paid to quality. When that meat is prepared the butcher often gets the blame for its quality, when really it was the housewife who did not select her meat with the same care and thought that she uses in buying her other provisions.

With this in mind a special course is provided for the young women in home economics. The boys kill enough additional animals to provide this class with dressed carcasses. The girls will then have experience in cutting and identifying the various cuts of the animals.

R. E. Karper, '14, who for the past 10 years has been superintendent of the Lubbock substation in Texas has been made assistant director and agronomist of the central Agricultural Experiment Station of Texas, located at College Station.

C. S. Goldsmith, '16, is manager of the ice cream department of the Central Products Company of Chanute, with headquarters at Parsons.

# Cooperative Livestock Marketing Associations in Kansas

R. M. Karns, '26

Kansas is the birthplace of the cooperative livestock shipping movement in the United States. More than 40 years ago, a group of farmers in Jewell county met and organized the first association ever formed for the express purpose of shipping livestock cooperatively. The first carlot of livestock was assembled in Jewell county, and shipped from Superior, Nebr., in November, 1883. Following the success of the undertaking in Jewell county, farmers in Smith county (bordering Jewell county on the west) saw the possibilities of cooperative effort in shipping livestock, and organized associations at Kensington and at Athol in 1889 and 1898, respectively. It is interesting to note that both associations are still in existence.

From the small beginning in north central Kansas, the movement has gained headway—slowly at first—but with added impetus since 1913. Other states have followed Kansas in the establishment of this type of cooperative organizations. The corn-belt states to the north and northeast of Kansas being especially active have taken the lead and have at the present time the greatest number of livestock shipping associations. The reason for this is that the farming practices of the corn belt make that type of marketing agency well adapted to the needs of the farmer of that section where the livestock population is large, yet so widely distributed that few farmers have a sufficient number of head to ship advantageously in carlots.

However, the cooperative shipping of livestock is an important activity in many Kansas communities and is becoming more important as the number of livestock shipping agencies increases. There are approximately 175 cooperative organizations in Kansas engaged solely or in part in the shipping of livestock. The number is, of course, constantly changing as new organizations are started or existing ones go out of business. There are two distinct areas in the state where the movement

shows the greatest development. One area consists of the northern tier of counties; the other is a group of counties in southeastern Kansas. The reason for this distribution is due chiefly to the variation in the types of farming. In those sections showing the greatest number of shipping associations the farms are relatively small and diversified farming prevails. Practically every farmer has a few head of livestock, yet only a comparatively few handle a sufficient number of animals to enable them to ship in carlots.

Back of any farmer movement there must be causes. The fundamental cause in the case of the cooperative shipping movement was dissatisfaction with the existing system of local buying. The cooperative shipping of livestock is peculiarly suited to the need of communities where the farmers are dissatisfied with the service of local buyers.

It is interesting to note that few cooperative organizations for the shipping of livestock are located close to our terminal markets; namely, Wichita, Kansas City, and St. Joseph. The trucking of small lots of livestock to these markets seems to have solved adequately the problem for farmers living within trucking distance. There are relatively few organizations of a cooperative nature in western and southwestern Kansas for the sale of livestock. In these sections the cattle population per farm is relatively large while hogs are comparatively few in number—the latter just about meeting the needs for home consumption.

In a survey made by the Department of Agricultural Economics, the cooperative associations of Kansas were asked to give their reasons for organizing or for adding the livestock sideline to their business. Eighty percent of all replies stated that local buyers' margins were too wide. Some stated that organizations were needed to protect the small shipper. Others stated that buyers gained too much by "lumping off," or by buying off-

grade livestock far below market value, even though giving full market value for the better classes of livestock. Approximately 10 percent of the replies were to the effect that livestock was added as a sideline to other lines of business for the purpose of spreading "overhead" over a greater volume of business. Eight percent replied that there were neither local buyers nor regular buyers at their shipping points. Only two organizations were organized mainly for the purpose of sponsoring cooperative interests.

A sufficient volume of business is necessary in any kind of business undertaking. It is as essential in a livestock shipping association as in any other business enterprise. The volume of business should be sufficient to permit economy of operation. A small volume means added difficulty in securing and retaining a good manager. Less economy is possible in shipping since more time is required and more difficulties are encountered in assembling carload lots. Straight carlots are harder to assemble and freight and other charges on mixed lots are usually higher; also there is more likelihood of cars of medium weight being shipped, all of which will make higher charges per unit of livestock shipped.

The number of cars shipped per organization in Kansas for 1922 was 37.6. The average number of cars shipped per organization for 1923 was 43.9, or an increase of 6.3 cars. The range in number of cars shipped by one association was from 5 to 324.

One of the outstanding deficiencies of many Kansas livestock cooperative association is the lack of sufficient volume of business. Certainly those organizations handling fewer than 20 cars of livestock cannot be operating as efficiently or as economically as would be possible with a larger volume of business. The low volume may be due to a lack of livestock in the community; if so, it is difficult to overcome. If, however, low volume is due to failure to secure the business of the community it can be more readily remedied. Efficiency and economy of a service and care to avoid dissatisfaction among shippers are factors that will help to win the support of the producers and shippers. The association must serve the needs of the community in which it is operating.

It is practically impossible to attempt to measure the extent to which the hoped for benefits have been realized. The practice of "lumping off" (buying on a per head basis) has largely been discontinued; a better market for off-grade stock has been provided; and in many cases the margin between the producer and the market price has been materially reduced. At the very least it is safe to state that cooperative livestock shipping has introduced an element of competition that has undoubtedly resulted in greater efficiency and economy in the marketing of livestock from local points. For this reason it is one type of cooperative effort in which the percent of success is unusually high.

## The New Kansas Seed Law and Its Application

Fred H. Hull, '26

The new Kansas seed law, passed by the last session of the legislature, has the hearty approval of everyone interested in better crops and better agriculture for Kansas. It has been a matter of regret that Kansas, which leads or is among the leaders in many phases of agriculture, should wait to be the forty-second state to pass a seed law. This lack of proper legislation has caused Kansas to be looked upon as a dumping ground for many kinds of undesirable seeds that could not lawfully be sold in other states.

The seed law prevents the sale of seeds containing any great amount of noxious weed seeds. The importance of such prevention is

apparent when the fact is considered that the greater number of noxious weeds of the United States were introduced in importations of agricultural seeds. Some of these weeds have not yet reached sections where they would be serious pests if present.

The seed law also prevents the sale of seed having a germination test so low that it is worthless. It makes it possible for the farmer to know the quality of the seed offered to him. He can learn from the label the percent of germination of the seed, and the place where it was grown. In many cases the value of agricultural seeds is determined largely by the place where they were grown. Seed corn from

the corn belt is not well adapted to Kansas conditions. It produces distinctly lower yields, than does good Kansas-grown seed. Alfalfa seed from certain parts of Europe and of South America is very inferior to seed produced in the United States. Kansas seed is best of all for Kansas. Therefore it is important for the grower to know the origin of the seed he plants. The percent of seed which will germinate is obviously important also.

The seed law applies to "agricultural seeds," which by definite means every kind of seed planted on Kansas farms, except garden and flower seeds. Seeds for feeding or manufacturing; untested seeds, if labeled "untested;" seeds to be tested before being sold; and seeds sold by the grower on his own premises are exempt from the provisions of the law. All other seeds offered for sale in lots of 10 pounds or more must be labeled. The label must contain the name of the kind and variety of seed; name and address of the person or firm putting the seed on the market; approximate percent by weight of purity; and origin, if known, otherwise it must be marked, "Origin unknown." It must also contain the percent of germination, with the date the test was made, and the percent of noxious weed seed if over one-tenth of 1 percent.

Section 5 of the Kansas law prohibits the sale, as tested seed, of any seed containing more than one seed of dodder or Johnson grass to five grams, or more than one seed of field bindweed to 100 grams, or more than one-tenth of 1 percent of any other noxious weed seed.

Official purity and germination tests may be secured by sending a representative sample to the State Board of Agriculture, Control Division, Topeka, Kan. The sample should contain at least one ounce of grass seeds, two ounces of alfalfa, clover, and like seeds, one-half pound of small grains and sorghums, and one and one-half pounds of corn, soybeans and seeds of similar size.

The sample should be taken with care to see that it is representative of the entire lot of seed. Cloth bags or strong envelopes, which can be securely closed, should be used for mailing. The owner must place a lot number or some mark on his sample by means of which he can positively identify the sample with the lot from which it was taken. This mark accompan-

ies the seed though the testing and will be found on the reports which go from the seed laboratory.

The actual testing of the seed is done in the State Seed Laboratory, located at the Kansas State Agricultural College, at Manhattan. When a sample is received at the seed laboratory it is registered by serial number, and all information available concerning it is put on record. The State Seed Analyst then makes a purity test, which means thoroughly mixing it and then separating a certain amount of it by hand into dirt, weed seeds, other seeds, and pure seeds. This work is done under a large reading glass. The total and the different parts are weighed on delicate balances and the percent of purity is computed from these results. The pure seed is then passed to the germinating room, where duplicate tests are made. The germination test usually requires six or seven days.

All of the information obtained from the tests is included in the reports sent out to the owner and to the State Board of Agriculture. The State Board of Agriculture keeps its copy of the reports on permanent file. The owner transfers the information to labels, which he puts on each package of seed offered for sale. Farmers can obtain labels from the Secretary of the Kansas Crop Improvement Association, whose office is at Manhattan.

Anyone may make his own tests and label accordingly, but he will be held responsible under the law for the accuracy of the information.

The secretary of the State Board of Agriculture, or his agent, may sample and inspect seeds offered for sale, at any time or place which he may deem necessary.

It is not expected that there will be many cases of willful breaking of the law. It is necessary, however, if farmers enjoy the full benefits of the law, that they understand its provisions and make use of them. No law is effective unless the people are educated to see the value of it. Farmers must recognize the value of good seed and the negative value of bad seed. With this knowledge they will undoubtedly make use of the law to secure the best seed, which means better crops and a considerable slackening in the rate of spreading of many noxious weeds.

# Selection and Care of Poultry for Breeding Purposes

Clyde Ingram, M. S., '26

Healthy, vigorous, standardbred birds are stepping stones to success in poultry breeding. Health and vigor are indicated by a broad head; prominent, alert eyes; short, curved beak; broad chest; and a disposition to keep busy. Lack of health and vigor are indicated by a narrow head; long, straight beak; sunken eyes; narrow chest; and a disposition to loaf. Poultry culture, like any other line of livestock work, cannot be developed to any degree of accuracy without paying careful attention to the selection of birds to be used as breeders. In selecting the breeding stock two things should be given particular consideration—their standard qualities and their past egg production.

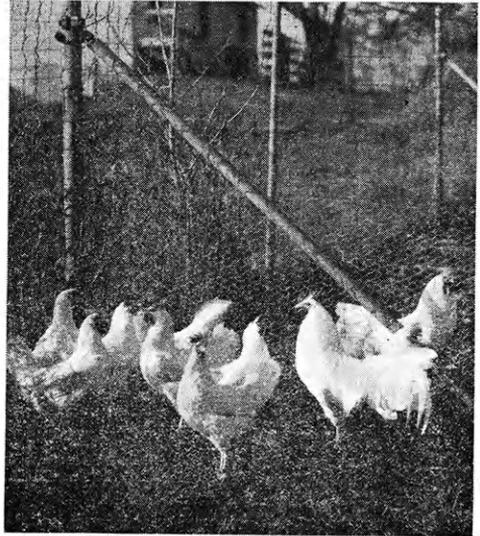
By breeding from the best in the flock the progeny will in accordance with the laws of heredity resemble the parents in many respects and will be of higher type than if the entire flock had been used. Mass breeding does not assure superiority or in other words when eggs are selected year after year from flock run stock, about all that can be expected is just to maintain the same standard in the succeeding generation as was attained in the past. In some cases the standard will not be maintained. In flock breeding one breeds from undersize, immature, off-type, disqualified, and many times birds of poor production. Many of these undesirable characters can be eliminated by the selection of the best birds to be used as breeders.

In selecting the breeders one should study the "Standard of Perfection" to become familiar with the requirements, disqualifications, and defects of his breed. Birds should not be used which have disqualifications or very bad defects. In selecting the male bird one should select either a well-matured vigorous cockerel or an active vigorous cock bird.

Some experiments have shown that the male bird is more potent than the female in transmitting egg-laying ability. If this be true, it is very fortunate for the farmer or

small poultryman who does not care to go to the trouble of trap-nesting and pedigreeing for his future breeding stock. Because of the fact that the male is mated to the maximum number of females it is very important that he be of as high quality as possible. One may, indeed, easily improve his stock by purchasing pedigreed males from high-producing lines and mating to his vigorous hens.

The best time to select the breeders is at



Single Comb White Leghorns

This breeding pen of Leghorns shows a combination of exhibition qualities and high egg production.

culling time in the fall. Hens which molt late, show fine quality of skin and bone, have pale shanks and beaks, and have good body depth are usually the best producers. Birds which show these characters and possess good weight and vigor in the fall should be marked and saved for breeders. Hens are found to be more desirable as breeders than pullets for two reasons: (1) Mature hens' eggs are larger and hatch better than pullet eggs, and the

*(Continued on page 64)*

# Co-Partnership on the Farm

Walter Burr  
*Professor of Sociology*

The Purnell Act, passed by the late session of Congress, providing funds for special research in rural conditions, may be expected to result in some surprises for those who have been repeating old stories of what was supposed to be true in the hinterland.

One of the surprises in store will have to do with the farm woman and the farm home. It is true that some few years ago the Government became a big Brother to dissatisfied farm women, and let them cry it out hysterically on his shoulder. Several thousand letters were written asking farm women to state their particular needs. A small percent were answered. The needs were classified and published in a series of bulletins to show the awful plight of farm women.

Probably if some department would send out letters to several thousand city husbands, asking for their particular grievances against their wives, answers would again be received. A composite of these answers, however, received from such men as WOULD answer, could hardly with fairness be said to be a compendium of any value concerning city conubial relationships.

Many matters regarding the condition of the farm woman and her work, and concerning rural child labor, cannot possibly be understood except when viewed from the standpoint of the farm business itself.

Farming is a business. Slowly both the business world and the farm people themselves have waked up to this fact. It is the biggest business in the aggregate in the whole United States—or for that matter in the whole world.

Industry in America is carried on in something like three hundred thousand separate plants; but the farm business is carried on in six million plants. The farm family is, and will be for a long time to come, part and parcel of the farm business. The members of the family are all workers at the business, with the farmer himself at the same time a manager and a worker. During the period of depression through which we have recently passed, it was this decentralized and family na-

ture of the farm business that enabled farming to survive. There were losses which no other industry could have endured; but they were weathered largely because the members of the farm family could make sacrifices, work a little harder, buy a little less, and retrench all along the line.

In a calling that must support a place of business and a separate home, and in which every person employed must receive a fixed wage to hold his services, these losses could not have been absorbed.

The farmer's office is in his home. His co-workers are members of his family.

Here is a picture of a farm home which the writer recently visited. The farmer is in the Hereford business. He owns one thousand acres of the best bluestem grass that ever lay out of doors. He has three hundred acres of alfalfa. On his stock farm there are three tenant houses, each occupied by a father, mother, and children. In the corner of his big dining room is a modern type of office desk, and standing by it an up-to-date filing cabinet. On the table near at hand, neatly arranged, are several livestock journals.

In that office corner are three telephones, enabling this farmer business man to do business with farmers and dealers twenty-five miles or more in every direction. He keeps a complete set of books and posts them regularly. His property is all invoiced, and he can tell you any day approximately where his business stands.

Notice that this business is actually transacted in a corner of the dining room. The other furniture in this office is dining room furniture. The wife and daughter are busy passing in and out in the preparation of meals. The farmer himself is out of the office a good deal of the time; but he does not hire an office girl to chew gum and make eyes at him and other workers. When the phone rings, the wife or daughter answers, and they know how to transact much of the buying and selling business of the Hereford farm. When they cannot attend fully to calls, they list the

parties' names and have the manager call them up when he comes into the office. This office is always "open." He has no eight-hour day; no "gone home to dinner" sign for the door. Even a night call is given attention by the manager himself.

This gives the entire family a training in business. It makes the family business the chief topic of conversation in the family circle. Anyone who has visited or lived in farm homes must admit that much more than 50 percent of the conversation is on business—the business of production, of buying and selling, of financing and shipping. The radio in the dining room now brings in the world market news every day, at the dinner hour, with the entire family listening in. Where could one find a better education in business, or a better means of solidifying group life?

To many uplifters, the farm people have become special clients, for whom they desire to make as strong a case as possible with regard to inferior conditions of living. Much has been written, for example, about the inadequacy of the farm home itself. The city investigator approaches it with the idea that it would be very much like the house with which he is most familiar and which he likes best. Many farm homes are actually built architecturally after plans designed for city houses. But the city house is usually on a fifty-foot lot, with other houses on both sides, while the farm house is to stand out alone and with reference to the other farm buildings which are a part of the farm business.

A very prominent farm woman of Iowa recently said: "I wonder what college surveyors of farm living conditions would have reported about our way of living, if they had happened to drive into our yard during a brisk shower last summer. The cows were out in the pasture, and father had told our two boys to ride the horses out after them. When the boys came in, after the shower was over, I noticed their clothing was not wet. They explained that since there was no danger of anyone being out in a torrent like that, they had seen no reason for getting their clothes soaked. So they left them in the barn, and rode out after the cows not only "bare-back"—but bare everything else."

Doubtless the investigators would have been greatly shocked, and would have reported

boys on Iowa farms wearing no clothes whatever. Yet this is on one of the wealthiest farms of Iowa, and the woman who reported it is the wife of one of the great leaders of farm organization in the nation.

The now well-known opposition of the farmer to the child labor amendment can be explained only in connection with the relationship of the family and the business. Every member of the family feels a proprietary right in the farm and everything on it. Therefore, on a well-organized farm everybody works. The amount of farm and home work done by the average farm boy and girl is well balanced with other activities. As long as farming is a family business, the farm boy and the farm girl will do a reasonable amount of the farm and home work. It is much preferable to the loafing and the trouble-finding time of the city boy and city girl.

The divorce problem in the American farm home is almost nonexistent. Along with other reasons for this, stands this one: The farm woman is a partner in a business. In no such way is the wife of the grocery man, of the lawyer, or the doctor, a partner in the business. Ordinarily the deed to the farm bears the wife's name as well as the husband's. If the place was inherited, it is as likely to have come down from her family as from his. It is notably a fact that in many regions the farm woman is coming to have an increasing independence as well as share in the income. This gives a common ground of interest between man and wife such as is not known among city dwellers. It furnishes also a business bond of attachment that adds strength to the bond of affection and the bond of the law.

Remember, there are six million business plants in America run on a co-partnership plan. The business partners are father, mother, and the kiddies.

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Price H. Wheeler, '16, extension agriculturist for the Garden City Sugar Beet Company, was appointed a member of the committee to form a permanent organization for the promotion of irrigation in the Arkansas river valley.

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Fred W. Milner, '15, is graduate assistant in dairying at the University of California. He is located at Davis.

# The Development and Extension of the Sugar Beet Industry in the Arkansas Valley

Vance M. Rucker, '28

The sugar beet industry is one of the youngest industries in the state, as shown by the reports of the secretary of the State Board of Agriculture. The first instance of the recognition of the industry was in 1901, when the state was paying a bounty of \$1.00 a ton to induce people to grow sugar beets. There had previously been some experiments carried on in the eastern part of the state, but these were discontinued and the report made, "The state is not adapted to growing beets."

After the successful growing of sugar beets in the Arkansas river valley in Colorado by the aid of irrigation, it was determined to experiment in western Kansas where they had much the same conditions. The first beets grown in the state were grown under contract with the American Beet Sugar Company, of Rocky Ford, Col. These beets showed a test in sugar content of 17.6 percent, whereas the beets of Germany, the great sugar beet country of the world, showed only 15 percent.

The first and only sugar beet factory of Kansas was opened at Garden City in the fall of 1906, by a Garden City company. It has not missed a season of manufacturing sugar since the opening. The sugar beet acreage has increased steadily until the present season finds the tonnage at the record of production in the history of the factory, the estimate for the season being 200,000 bags of sugar according to report by Mr. P. H. Wheeler, the extension agriculturalist of the Garden City company.

The company has a working contract with the producer, which calls for a payment of \$5.50 a ton on the delivery of the beets; a second payment in three months; and a final payment in September of the following year. This final payment is based on the selling price of sugar throughout the year following the harvest. The company pays freight on all su-

gar beets shipped.

Previous to 1918 practically all of the beets were grown in Finney and Kearney counties. At this time, however, a few experimental projects were started by farmers in Pawnee county. This Pawnee area has grown until the acreage now is 1,000 acres. The increase here has been due mostly to the fact that the soil of the Pawnee Creek valley is very well adapted to irrigation and the production of beets. This soil is a black silt loam of limestone origin, a rather heavy type of soil. A soil containing too much sand is too porous and water leaves it too quickly, while a soil too heavy has a tendency to bake. Further, water is obtainable for irrigation in the Pawnee area at from 30 to 40 feet, and this together with the adaptation of the soil, accounts for the average yield in the Pawnee district last year being 3½ tons per acre more than in the rest of the state. The average yield in the Pawnee district was 14 tons per acre.

There are at present time experimental plots of beets being grown in the following counties: Gray, Ford, Edwards, Barton, Rice, Reno, Harvey, and Sedgwick. The most of these experiments are backed by the local Chambers of Commerce with the idea of showing the possibilities of irrigation throughout the entire Arkansas valley.

The chance of over production of sugar seems very small as the United States produced only about 18 percent of the sugar they consumed last year, 82 percent being imported. It would take fourteen factories with the annual production of the factory at Garden City to supply Kansas alone with her annual sugar consumption. The prediction is, there will be new beet sugar factories built lower down the valley within a very few years.

*(Continued on page 58)*

# The Relation of the Farm Woodlot to the Farmstead

Harold J. Brodrick, '26

Proper management of forest trees on the farm will add to its beauty and comfort as a home and enhance its value as an investment.

About one-third of all the forest land of the United States is on farms. This means that in aggregate the farm woodlots amount to about 190 million acres. In the eastern part of the country (east of the Plains) the total woodlands on farms amounts to about 178 million acres. The average amount of woodland on farms varies somewhat in the different sections of the country. In the eastern part it is 31.5 acres, while in Kansas the census finds only approximately 1.7 acres. The total acreage of wild timber in Kansas is 313,137 acres. The acreage of the four most important species for wood production in Kansas is as follows: Walnut, 3,310 acres; locust, 5,236 acres; cottonwood, 10,760; catalpa, 10,227; other valuable species, 12,537 acres.

The home forest, in this section of the country, will supply much of the timber which the farm needs for buildings, fences, fuel, repairs of many kinds, and numerous other uses. There will often be a surplus which can be sold in the form of standing timber, sawlogs, posts, poles, wood for fuel, or blocks and billets for making tool handles, boxes, and barrels. A well-cared-for woodlot serves also as a wind-break for buildings or orchards, a shelter for livestock, and a protection of valuable lands from erosion. The last of these uses is of primary importance though commonly entirely overlooked.

The woodlot also makes a very good place for recreation. It is an ideal place for picnics and such events. It may be used for hunting.

Trees will improve and build up the soil. The dead leaves, twigs, and such litter on the ground decompose into a layer of vegetable mold, which enriches the soil and stores up soil moisture. The binding of the soil by the roots of the trees and the resistance of the trunks to the flow of water prevent floods from gullyng or washing away the soil, par-

ticularly on steep slopes.

Even if a farmer sells no timber the woodlot pays. The uses to which wood from it can be put on the farm and the protection the woodlot gives, more than make up for the slight expense of raising and caring for the trees.

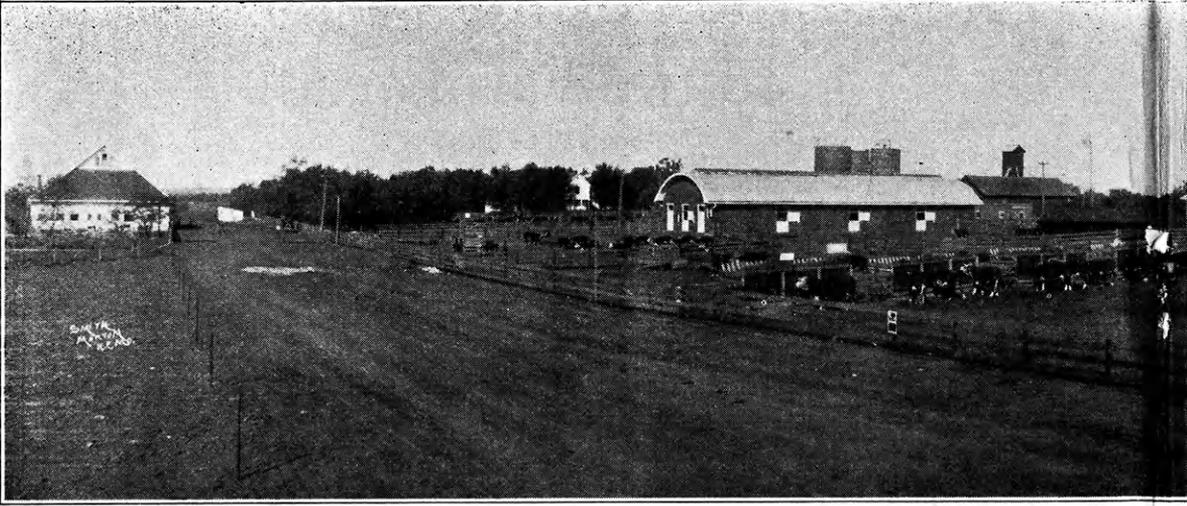
The woods need not occupy good farm land that will grow other crops. Trees, as a rule, should be located on waste land, steep slopes, and barren or moist soils. Small uncultivated spots and unused corners are good places in which to have a few rapid-growing trees planted. With but little care this land can be made to produce a valuable stand of timber.

Firewood is one of the important crops of the farm. In 1918 an average of 11.5 cords of wood, or a total of 77,092,000 cords, was burned on the farms of this country. The total production of cordwood for both farm and city use was approximately 102,903,000 cords, with an average value of \$4.73 per cord. (The price is higher at the present time.) The value of the fuel wood crop cut from farms in 1918 was exceeded by that of only five crops—corn, wheat, oats, rye, and cotton.

At the present time farm woodlands are yielding only from one-third to one-half the wood they could grow. This is because only a few farmers realize the possibilities in their woodlands and give them proper care. As a result the home woodlot, which is close at hand and which if given a little attention each year in protecting, cutting, and utilizing the timber would be very profitable, is in poor condition.

The chief essentials in keeping the trees growing are excluding fires and allowing the humus to collect on the woodlot floor. Large openings in the woods reduce the annual timber yield and should not be allowed to remain unoccupied. The length of time required for trees to reach merchantable size varies with the kind of trees and the use to which they are to be put. Posts and cross-ties may be grown in

*(Continued on page 58)*



Panoramic View of Hazford

In the foreground are seen a number of paddocks in which cattle are shown according to ages. To the extreme left is the sh

## Hazford Place—A Great Kansas Hereford Farm

H. Wayne Rogler, '26

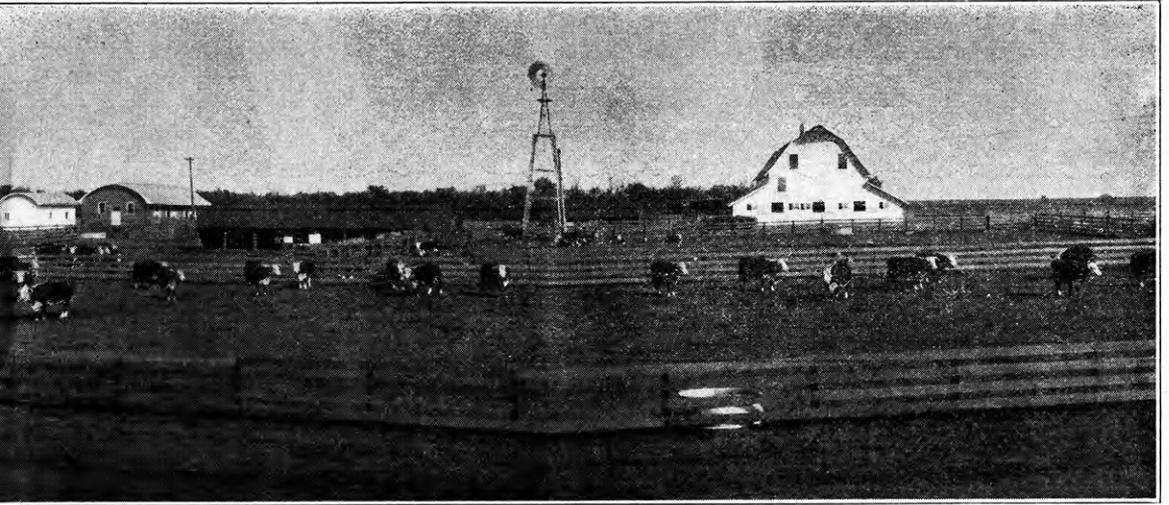
The personality of men is expressed in many ways: Edison expresses himself through experimentation; Jack London, by means of his pen; Calvin Coolidge, through government; Robert H. Hazlett, through Hazford Place.

To the more fortunate who know Mr. Hazlett and have visited Hazford Place, the two seem as one. One is the expression, the fulfillment and the achievement of the other. The place is as practical as Mr. Hazlett is businesslike. Mr. Hazlett's cattle are as good as his judgment is sound. Twenty-seven years ago Mr. Hazlett started breeding Herefords as a business. Coupled with this was a desire to leave the world better for Hereford cattle. Today America can take just pride in a place that has weathered the storms of 27 years of business panics and still remains the greatest breeding establishment in the United States.

One is more than impressed by the breeding herd at Hazford Place than by the show

herd. Yet few other show herds can boast of the record that Hazford Place has set in the arena at the American Royal and International Livestock Shows. Possibly no other herd has received as many laurels in the groups and get of sire classes. In addition, it has given to the world one of the breed's greatest sires, Bocaldo 6th. This name with that of Yerba Santa, Bloss 16th, and Publican 4th will ring loud and clear in the breeding circle. All were bred and raised on Hazford Place. Although, this show herd is probably unparalleled in America, one gets the impression that Mr. Hazlett maintains a show herd to show the results of his breeding herd.

To visit the show cattle in the barn which houses them is to fall in love with them. These aristocrats of Hazford Place seem to have absorbed the spirit which permeates the whole establishment. The show barn seems to mean more to them than a temporary home for the three months between show seasons,



Place Near El Dorado, Kansas

now barn, while in the background, yet fronting on the main road, is the residence of the superintendent, Mr. William Condell as is the case with many herds. Each of them seems proud that he is the offspring of Hazford Place ancestry.

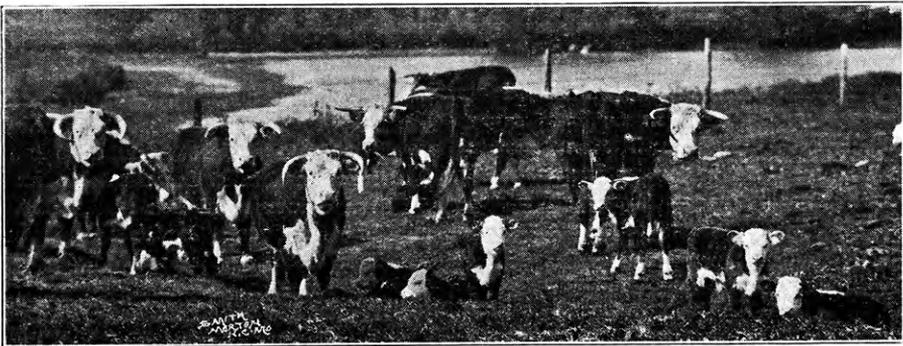
Yet of more significance than the wonderful record which Hazford Place has in the show ring, is its great group of breeding females. Nearly 400 in number, their wonderful uniformity, superior type, and almost faultless conformation bring one to a full realization of Mr. Hazlett's work. The older females, certainly an index to the herd, are droophorned, smooth and matronly-looking mothers. Each one has great scale and substance, together with refinement and quality. A judge would be at a loss if he attempted to

place them, so little difference is noticeable. They are in the words of Mr. A. H. Sanders of the Breeder's Gazette, "the greatest lot of good cattle I have ever seen on either side of the water."

The uniformity of females which distinguishes this herd denotes three things: (1) That great bulls have headed it; (2) that superior skill has been exercised in matings; and (3) that severe culling has been practiced. There is a noticeable absence of the small hard type which so often occurs, even in a herd of superior animals.

While Mr. Hazlett has been building and

*(Continued on page 62)*



Courtesy American Hereford Journal  
Hazford Place Cows with Fall Calves at Foot

# THE KANSAS AGRICULTURAL STUDENT

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## TO THE YOUNG MEN IN KANSAS HIGH SCHOOLS

Year after year a larger and larger percent of the seniors in Kansas high schools plan to enter college. Many of them plan well, but the decisions as to which college to enter and what curriculum to pursue are among the most fundamental and important of life's decisions. Each of you should expect a college training to help YOU develop in breadth of vision, perspective, mental alertness and balance, physical well-being and perfection, sound moral principles, vocational efficiency, and in and through all, promote happiness, a reasonable measure of prosperity, and altruistic leadership. For development along such lines Kansas State Agricultural College offers splendid opportunities.

In the second place, for the best interests of both the individual and the State larger numbers of high school seniors should select the "Curriculum of Agriculture" in K. S. A. C. for their college curriculum. This curriculum provides a first-class, all-round college training. For the practice of agriculture and agricultural pursuits, for professional agriculture, for agricultural business or even business in an agricultural community, it offers a college training superior to any other.

For young men desiring to teach, either as a stepping stone to another vocation or as a profession for life, the curriculum in agri-

culture offers first-class opportunities. It is the only one offered in the state that adequately prepares for the teaching of Smith-Hughes agriculture in high schools.

The new curriculum in agriculture will be adopted by the college faculty and ready for the college catalog before the next issue of *The Kansas Agricultural Student* goes to press. This new curriculum will be presented and discussed in the March number of this magazine. We hope that several hundred young men, now seniors in Kansas high schools, especially young men in farming communities, and particularly those who are farm-reared and have had farm experience, will give this forthcoming article careful study, and weigh the opportunities and possibilities for them thoughtfully and seriously before deciding on any other college curriculum.

Young men, K. S. A. C. is offering larger and larger and constantly improved opportunities to Kansas youth. You should know the institution and you should know the curriculum in agriculture, the curriculum that in no subordinate and uncertain way upholds the ideals and purposes for which K. S. A. C. was founded. It is good enough to appeal to the best young manhood in Kansas and through them render larger and larger service to the State.

# College Notes

## K. S. A. C. POULTRY JUDGING TEAM WINS AT AMERICAN ROYAL

The Kansas poultry-judging team placed first in the poultry-judging contest held in connection with the American Royal Livestock Show, Kansas City, November 20, 1925. Five teams competed. The contest was unusually close, Kansas and Iowa having the same total number of points and the same number of first placings, but Kansas had the larger number of second placings. The placings of the teams and their scores are as follows:

Rank	Team	Score
1	K. S. A. C.	1,860
2	Iowa State College	1,860
3	Texas A. & M.	1,830
4	University of Missouri	1,790
5	University of Nebraska	1,710

S. M. Raleigh of Clyde was high-ranking individual of the entire contest with a score of 665. Walter Wisnicky placed fifth with a score of 635 and Albert M. Watson, the other member of the Kansas team, placed twelfth in individual scoring.

Other Kansas men who judged, but whose scores did not count officially, were Kenneth Knechtel, Wilbur Merlyn Mann, F. A. Peterson, and T. A. Newlin. The scores of the first three of these men totaled 1,845, but 15 points below the score of the first squad.

The record of Kansas poultry-judging teams in the American Royal contests is exceptionally good. Kansas has won three of the last five contests. Much credit for the success of the Kansas teams is due to their coach, Prof. H. H. Steup of the Department of Poultry Husbandry.

## PHI KAPPA PHI ELECTS

In a recent election, the local chapter of Phi Kappa Phi, national honorary scholastic society, elected new members from those students whose grades at the end of the summer school were sufficiently high to place them in the upper 5 percent of the senior class in scholastic achievement.

In the Division of Agriculture this honor was won by Adolph G. Jensen of Neodesha and Walter Wisnicky of Green Bay, Wis. Mr. Jensen had the unusually high scholastic rating of 2.765, or 95.65 percent.

## THE APPLE-JUDGING TEAM WINS AND LOSES

Missouri, Kansas, and Oklahoma placed in the order named in the apple-judging contest held in Kansas City, Wednesday, December 9, 1925, under the auspices of the Central States Horticultural Exposition. The K. S. A. C. team was composed of Fred P. Eshbaugh of Manhattan; Henry L. Lobenstein of Bonner Springs; J. H. Shirkey of Madison, and Fred W. Schultz (alternate) of Wathena. Fred P. Eshbaugh was second high-point man in the contest. Prof. R. J. Barnett of the Department of Horticulture coached the team.



K. S. A. C. Poultry-Judging Team at the American Royal and Coliseum Expositions

The members of the group are as follows: Bottom row, left to right—Albert M. Watson, Walter Wisnicky, and Stephen M. Raleigh. Top row, left to right—Merlyn Mann, (alternate at American Royal only), Prof. H. H. Steup, (coach), and Kenneth W. Knechtel (alternate.)

## AGRICULTURAL SEMINARS

The first meeting of the agricultural seminar for the college year 1925-26 was held Thursday, October 8. Eric Englund, professor of agricultural economics, spoke on "Some Aspects of British Agriculture." The following is a brief summary of his address:

England, prior to the World War, was a nation whose people made their livelihood, largely, by selling manufactured goods abroad and buying food and raw materials from foreign countries. England also carried the major portion of the commerce of the world. Her agriculture did not produce enough food to feed her population.

By repeal of the corn laws (protective tar-

iff on grain) in 1846, England compelled her agriculture to "sink or swim" in foreign competition. This repeal was a result of the political strength of the industrial and commercial population coupling their interests in cheap food and raw materials. British agriculture could not hold its own in competition with the Mississippi valley and other new and fertile areas. But British industry advanced rapidly, ahead of the industries of other countries, until at the beginning of the World War, England was perhaps at the height of her commercial power.

The close of the war brought a new situation. The destruction of wealth in foreign countries and inflation of their currency reduced their purchasing power so that they were unable to buy as much as formerly and were faced with the necessity of manufacturing at home or doing without. This stimulated home manufacture in countries which had previously been dependent upon British industry for manufactured goods.

Reduced demand for British goods, inactivity of the shipping trade, and general depression of industry resulted in wide-spread unemployment involving 1 1-3 to 1 1-2 million men. In addition, England was left with a war debt of 35 billion dollars under which the tax payers are now struggling.

The present heavy tax on land and land owners compels the breaking up of large estates into small holdings. The progressive inheritance tax has been largely responsible for the disintegration of large landed estates. The results have been that the small land owners must bear a high land tax and pay interest on their mortgages. British agriculture was probably in a stronger position under the old landlord-tenant system than under a system of small farms. Rents to the former landlord were often lower than the taxes and other obligations which the small land owner must now bear, incident to land ownership.

Foreign competition has had a marked influence on British agriculture. Land which during the war was used for grain production has reverted to grazing land, being unable to compete with other sections of the world devoted to grain production on a large scale. High labor costs, high taxes, and high interest charges are difficult to meet in the face of severe foreign competition. Very little can be

done by the State short of subsidy or a protective tariff, and these are not likely to be adopted in a country whose population is nearly 80 percent urban and interested in cheap food and not in prosperity for the grain farmer.

At the second meeting of the agricultural seminar, November 12, Prof. Dean, head of the Department of Entomology, gave an illustrated lecture on "The European Corn Borer Situation." His discussion, in the main, is presented in his article of this issue.

Mr. George S. Knapp, state irrigation commissioner, addressed the agricultural seminar, December 10, 1925. The following excerpts from his address will be of interest.

Eminent engineering authorities have said that Kansas soils could not be irrigated as Kansas was too far east. It took time to refute this idea. There is available practically no surface water. We have in Kansas, however, a large supply of underground water; especially is this true in the Arkansas river valley. Pumping experiments have shown that there is a flow of about 39 cubic feet per second of underground water in the Arkansas river valley. Irrigation lowers the water table while the pumps are running but the water level reaches normal before the next pumping season.

Twelve years ago the State Legislature created a State Board of Irrigation and endowed them with \$10,000 to install pumping plants. The first work in irrigation was bungled due to wells being put down too deep. These failures discredited pumping irrigation in Kansas.

Several years ago the farmers in the Arkansas river valley revived the interest in irrigation and associations were organized to sponsor demonstrations. The associations were successful and at present there is being carried out a definite and successful irrigation program in the state.

It costs about \$10 to \$15 per acre to make irrigation possible in the Arkansas river valley. This is cheaper than on any of the United States reclamation projects. The cost of pumping charge is \$1 to \$2 per acre.

Yields of various crops have been increased enormously by irrigation. Milo, corn, alfalfa, and sugar beets have done especially well.

Economic changes have promoted irrigation in Kansas. Higher standards of living and higher governmental expense have required the farmers to farm along safer and more scientific lines. Irrigation has made diversification possible in certain parts of western Kansas and is the cheapest insurance available to many farmers of the Arkansas river valley.

**KANSAS STOCK-JUDGING TEAM PLACES FOURTH  
IN EACH OF TWO GREAT INTER-  
COLLEGIATE CONTESTS**  
The American Royal Contest

The Kansas livestock judging team placed fourth among twelve teams competing in the

Kansas team were: T. M. Kleinenberg, Pietersburg, Transvaal, South Africa; Mary E. Haise, Crowley, Colo.; A. C. Hoffman, Abilene; Lionel Holm, Vesper; and H. Wayne Rogler (alternate), Matfield Green.

The contest consisted of judging twelve classes of livestock. On these 600 points were possible for placings, and an additional 400 points were made possible by reasons for the placings on eight of the twelve classes.

Kansas ranked first in the horses and mules class, with a score of 1,136 out of a possible 1,250. A. C. Hoffman was high individual of the entire contest in this class with a score of 246 out of a possible 250.



**K. S. A. C. Stock-Judging Team at The American Royal and International Livestock Shows**

From left to right the members of the group are: H. Wayne Rogler (alternate at American Royal), T. M. Kleinenberg, Prof. F. W. Bell (coach), Miss Mary E. Haise, A. C. Hoffman, Lionel Holm (alternate at International), and W. H. Atzenweiler.

annual intercollegiate judging contest held in connection with the American Royal Livestock Show in Kansas City, November 14, 1925.

W. H. Atzenweiler, of Huron, was high-point man on the Kansas team and ranked sixth in the entire contest with 891 points out of a possible 1,000. Other members of the

Kansas ranked second in the hog class and was fourth and eleventh on the sheep and cattle classes, respectively. W. H. Atzenweiler was fourth high individual of the entire contest in sheep judging with a score of 241 out of a possible 250 points.

The scores made by the first five teams

were as follows:

Rank	Contestant	Score
1	Texas A. and M.	4,386
2	Iowa State College	4,355
3	Colorado Agricultural College	4,295
4	K. S. A. C.	4,284
5	University of Illinois	4,263

The Kansas team has been a consistent winner at the American Royal, winning first in 1922, second in 1923, and first in 1924.

For the first time in the history of the school Kansas had a girl representative on the livestock judging team. Miss Mary E. Haise did her work in a creditable manner and was third in rank on the Kansas team and seventeenth in the entire contest.

#### The International Contest

In the International contest, held in Chicago, November 28, 1925, the Kansas team scor-



Mary E. Haise

ed a total of 4,411 out of a possible 5,000 points. While the rank of the team again was fourth, their marks were comparatively higher than in the previous contest since 22 teams representing various colleges of agriculture of the United States and Canada were entered in the International contest. The contest was characterized by both high and close scores among the competing teams.

The first five teams placed in the following order:

Rank	Contestant	Score
1	Oklahoma A. and M.	4,459
2	University of Illinois	4,434
3	University of Ontario (Canada)	4,416
4	K. S. A. C.	4,411
5	Iowa State College	4,393

The Kansas team was composed of the following seniors:

Name	Address
Mary E. Haise	Crowley, Colo.
W. H. Atzenweiler	Huron
T. M. Kleinenberg	Pietersburg, Transvaal, South Africa
A. C. Hoffman	Abilene
H. Wayne Rogler	Matfield Green
Lionel Holm (alternate)	Vesper

Miss Mary E. Haise, the first Aggie girl to be a member of a Kansas team in an intercollegiate livestock judging contest, was high individual on the Kansas team and placed tenth in the entire contest with a score of 894 points out of a possible 1,000.

The other members of the Kansas team with their rank and score are as follows:

Name	Rank in Contest	Score
W. H. Atzenweiler	12	889
T. M. Kleinenberg	19	881
H. Wayne Rogler	30	874
A. C. Hoffman	31	873

The Kansas team was first in beef cattle judging and won a scholarship offered by the Pullman Car Company.

Much of the success of the livestock judging teams which have represented Kansas in the past few years can be attributed to Prof. F. W. Bell of the Department of Animal Husbandry, coach of the stock-judging teams.

#### KANSAS PLACES SIXTH IN THE INTERNATIONAL HAY AND GRAIN JUDGING CONTEST

In the intercollegiate hay and grain judging contest held in connection with the International Livestock Show in Chicago, November 28, 1925, the Kansas judging team placed sixth among eight competing teams.

The contest consisted of three main features; namely, (1) identification of crops, including variety, scientific name, and region of adaptation; (2) commercial grading of corn, wheat, oats, rye, and hay with factors determining the grade; and (3) judging or comparative placing with written reasons of the following: Ear samples of corn, head sample of grain sorghums; threshed grain of wheat, oats, barley, red clover, alfalfa, and timothy; cotton lint and the determination of staple length of cotton.

The contestants, their ranks and scores are as follows:

Rank	Contestant	Score
1	North Carolina State College	4,281
2	Iowa State College	4,083
3	Ohio State University	4,047
4	Oklahoma A. & M.	4,033
5	Michigan Agricultural College	3,939
6	K. S. A. C.	3,891
7	University of Nebraska	3,664
8	Purdue University	3,290

G. Ernest Lyness of Walnut was high individual on the Kansas team and fourth in the entire contest. The other members of the team were: Robert W. Fort of St. John; S. F. Kollar of Manhattan; and E. B. Coffman (alternate) of Goodland.

This was the third intercollegiate grain-judging contest to be staged by the International. Kansas won the contest in 1924 and placed fourth in 1923.

**INTERCOLLEGIATE DAIRY-JUDGING CONTESTS**

The Kansas dairy-judging team placed seventh among twelve competing teams in the annual intercollegiate contest held at Waterloo, Iowa, September 28, 1925, under the auspices of the Dairy Cattle Congress. The team was composed of the following team members: Guy H. Faulconer of El Dorado; Harry A Rust of Manhattan; C. W. Thole of Stafford; and Earl M. Knepp (alternate) of Clay Center.

The team placings of the seven highest teams and their scores are as follows:

Rank	Contestant	Score
1	Iowa State College	1,580
2	University of Wisconsin	1,506
3	South Dakota State College	1,501
4	North Dakota Agricultural College	1,461
5	University of Nebraska	1,461
6	University of Minnesota	1,442
7	K. S. A. C.	1,429

In the intercollegiate contest of the National Dairy Exposition held at Indianapolis, Ind., Oct. 10, 1925, the same K. S. A. C. dairy-judging team, named above, placed sixth among 24 competing teams, scoring 3,754 points out of a possible 4,500. Guy H. Faulconer of El Dorado was high individual on the Kansas team and ranked fifth in the entire contest.

The rankings and scores of the six highest teams in the contest are as follows:

Rank	Contestant	Score
1	Iowa State College	4,016
2	South Dakota State College	3,927
3	New York College of Agriculture	3,841
4	University of Illinois	3,820
5	Ohio State University	3,800
6	K. S. A. C.	3,754

**COLISEUM POULTRY SHOW INTERCOLLEGIATE JUDGING CONTEST**

The same poultry-judging team which won first place in poultry judging at the American Royal in Kansas City placed eighth in the contest held in connection with the Coliseum Poultry Show at Chicago, Thursday, Decem-

ber 10, 1925. The team was composed of Walter Wisnicky, S. M. Raleigh, and Albert M. Watson. The ten teams competing and their ranks are as follows:

Rank	Team
1	Purdue University
2	Iowa State College
3	Oklahoma A. & M.
4	Ohio State University
5	Michigan Agricultural College
6	University of Illinois
7	University of Missouri
8	K. S. A. C.
9	University of Wisconsin
10	University of Nebraska

Kansas was third on written examination,



Adolph G. Jensen

seventh on exhibition, and ninth on production. The winning team made a score of 3,447.1 out of a possible 4,000 points.

**STUDENT POULTRY-JUDGING CONTEST**

On Saturday, October 17, 1925, the Department of Poultry Husbandry conducted the first student poultry judging contest ever held in K. S. A. C. The contest consisted of placing six pens of four hens each. The individuals of each pen were judged and placed on the basis of their actual recorded egg pro-

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duction. In addition there was given a true and false examination which covered the work given in the college course in "Farm Poultry Production."

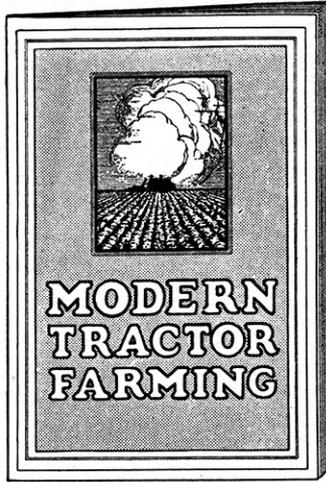
The contest was divided into two divisions, a senior division for those entrants having had the course in "Farm Poultry Production," and a junior division for those entrants who had not had the course in "Farm Poultry Production." In the senior division, 85 students registered, in the junior division, 15. The possible score of each contestant was 700.

The awards and placings of the winners in each division are as follows:

Contestant	Senior Division		Score
	Rank	Prize	
Vance M. Rucker	1	\$15	620
Howard Vernon	2	\$10	620
A. O. Turner	3	\$5	615
R. N. Lindburg	4	Cockerel	605
D. N. Taylor	5	Cockerel	605
I. O. Simmons	6	Setting of eggs	605
C. B. Krone	7	Setting of eggs	600
R. M. Karns	8	\$1	600
C. O. Fisher	9	\$1	595
D. E. Halbert	10	\$1	595
H. A. Rust	11	\$1	595
A. H. Ottaway	12	\$1	595
L. E. Melia	13	\$1	590
H. L. Murphy	14	\$1	590
E. S. Fry	15	\$1	590
O. K. Dizmang	16	Am. Poul. Jour.	590
Albert M. Watson	17	Am. Poul. Jour.	585
Walter Wisnicky	18	Am. Poul. Jour.	585
L. F. Ungeheuer	19	Am. Poul. Jour.	585
H. E. Myers	20	Am. Poul. Jour.	585
Contestant	Junior Division		Score
	Rank	Prize	
L. R. Freeman	1	\$5	600
Laurence H. Norton	2	Cockerel	590
R. F. Brannan	3	Setting of eggs	585
J. A. Dickson	4	\$3	585
Olive Manning	5	\$1	565
C. S. Channon	6	\$1	545
F. J. Raleigh	7	\$1	535
Louis P. Reitz	8	\$1	530
Oliver G. Lear	9	Rel. Poul. Jour.	525
Maurice M. Casey	10	Rel Poul. Jour.	515

H. C. Burt, '24, is employed by the Bureau of Entomology, United States Department of Agriculture. His address is Stonehenge, Charlottesville, Va. He is engaged stictly in research work, working largely on the corn earworm. As usual "Hydie" is having considerable experience outside of his regular job. He has recently built a new home which he and Mrs. Burt and the two little girls are enjoying very much. In the enumeration of his livestock possessions, he says he has 20 hens and 14 goats.

R. L. Fleming, '23, is in charge of the Guernsey show herd of Franklin county, Kan., which made such a splendid showing on the Mid-West Fair Circuit.



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To make it easy for farmers to obtain a broad view of this important development, this Company had a book prepared under the title "Modern Tractor Farming." The editors were instructed to make the presentation complete, accurate and impartial. Their findings are based upon quotations and statistics from the publications of the U. S. Dept. of Agriculture, the State Colleges and other recognized authorities. All examples shown are verified experiences of practical farmers.

More than 340,000 copies of this book have already been distributed. It has been translated into a number of foreign languages. A new edition of 100,000, revised and brought up to date, is now on the press.

Considering past experience, this edition will be exhausted early in 1926. Write today and a copy will be reserved for you. It will be sent free and postpaid.

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**THE SUGAR BEET INDUSTRY***(Continued from page 46)*

The sugar beet is a very hardy plant. Once above the ground it will stand a great deal of adverse conditions and still make a fair crop. It fits in very well with the type of diversified farming which can be carried on in the irrigated portions of the Arkansas valley.

The plant is well adapted for crop rotation as shown by the experiments carried on at the Garden City Experiment Station. These experiments show the following results: Plots grown continuously to sugar beets for a period of five years show an average yield of 13.10 tons per acre; plots grown to sugar beets in rotation with alfalfa, milo, and barley show an average yield of 15.53 tons of sugar beets per acre.

The sugar beets thus practically insure the farmer a cash crop, at least to such an extent that he can take his contract to his bank and obtain money for operation until the beets are harvested in the fall.

The beet tops also provide another source of revenue for the farmer, especially to the one who is carrying on diversified farming.

in the form of feed for livestock. They form a very succulent silage which has been estimated by men, who feed it continually to thousands of head of both sheep and cattle, to be equal pound for pound to cane silage. Feeders also estimate that the fresh tops, immediately after topping, will weigh about half as much as the beets.

The greatest problem confronting the sugar-beet farmer is that of labor. Most of the extra labor required in handling sugar beets comes from undesirable classes—Mexicans and Indians. This is the problem that must be met by the valley farmer. The tendency in the large beet districts is for the owners to leave and turn the farms over to the poorer tenants and foreign laborers, the best tenants refusing to take their families into such neighborhoods. Limited beet production with a well diversified system of farming may not develop such a serious problem.

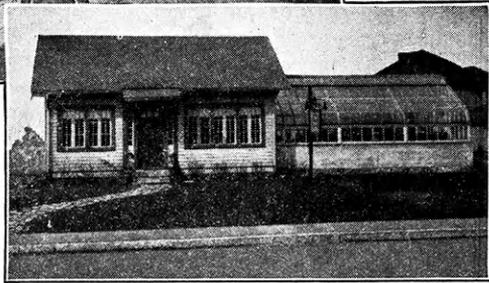
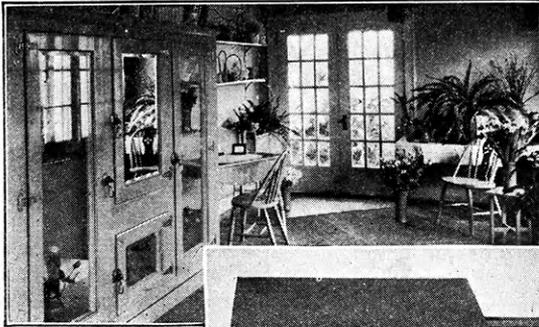
**THE FARM WOODLOT***(Continued from page 47)*

from 10 to 30 years, and most kinds of quick-growing trees will be large enough for saw

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## How This College Man Found the Secret of Making Money Pleasantly and Easily

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timber in from 20 to 40 years.

After removing the timber a new stand usually starts naturally from seeds or sprouts from stumps. Trees which sprout successfully include such hardwoods as the oaks, hickories, catalpas, willows, and young shortleaf and pitch pines.

Woodlands may also be restocked with young trees by sowing seed or planting small seedlings grown in nursery beds or dug up in the woods. If the trees are to be planted, it is well to select those native to the region and which grow most rapidly and produce the most useful kinds of wood. Trees good for Kansas planting are, black walnut, cottonwood, hardy catalpa, honey locust, white elm, green ash, red, black, pin, and burr oaks, silver maple, hackberry, Russian mulberry, and Osage orange of the deciduous trees; and red cedar, Austrian and Scotch pines, and the bull pine of the evergreens.

Good management should result in a farm woodlot fully stocked with sound, well-shaped trees of valuable and useful kinds that are growing as fast as possible. This can be bought about largely by cutting out the inferior kinds—the “weed” trees—for exactly the same reason that weeds are kept out of the cornfield. The good trees need the light, space, soil moisture, and plant food that would otherwise be taken by the less valuable trees. Sometimes it becomes advisable to fill openings or improve the quality of the woods by planting seeds or seedlings of desirable kinds of trees.

What sort of trees should be removed? Dead, dying, and diseased trees, deformed trees which shade out better ones; the less valuable species such as willow, red bud, and box elder; and the less promising trees in crowded groups. By following this practice each year improvement in the woodlot is brought about in a relatively short time.

The wood removed in improvement cuttings need not be a loss. It should be considered as an early crop that can be used or sold, generally at a price to show a profit on the work of thinning, while the woodlot is made more valuable by its removal.

In finding a buyer for his timber the owner should inquire of his neighbors who have sold out, or at local sawmills, wood yards, wood using factories, railroad stations, and telegraph and telephone companies. He should

also advertise in the papers and write personal letters furnishing a brief description of the kind, quality, and amount of timber for sale, in order to awaken competition among local and outside buyers. Some of the industries buy their supplies largely or wholly in the log; hence, in many cases it will pay the farmer to look up these special markets for his logs, poles, ties, etc. Industries buying their supplies more or less generally in the form of round timber are manufacturers of cooperage, boxes, handles, veneer, and woodenware.

As communities become older methods of woodlot management will receive more adequate attention both because of the economic importance of the woodlot and of the invaluable contributions which the woodlot may make to the farmstead and the community.

---

R. D. Lafin, '12, is rated as one of the most successful county agricultural agents in Iowa. He is located at Newton, Jasper county.

G. P. Potter, '07, is one of the outstanding farmers and cattle feeders of the state. He is located at Peabody.

G. M. Drumm, '21, is instructor in dairying in the University of California. He is located at Davis

W. J. Daly, '25, is the county agricultural agent in Lincoln county, Kansas.

F. H. Paulsen, '23, is farming near Stafford, Kan. Last March he was married to Miss Irene Maughlin, '23.

E. C. Scott, '24, obtained the degree, M. S., at the Michigan Agricultural College at the end of the summer session. He is now instructor in dairying in that institution, East Lansing.

R. L. Stover, '24, is fellow in dairying husbandry in the Oregon Agricultural College, Corvallis.

C. R. George, '23, is herdsman of the famous Reuping herd of Guernseys, Fond du Lac, Wis.

George F. Ellis, '25, is teaching vocational agriculture in the Mankato (Kan.) High School.

F. H. Shirck, '23, M. S. '25, is junior entomologist in the Bureau of Entomology. At the present time he is working in the entomological laboratory located in Toppenish, Wash. He is working on wire worm investigations.



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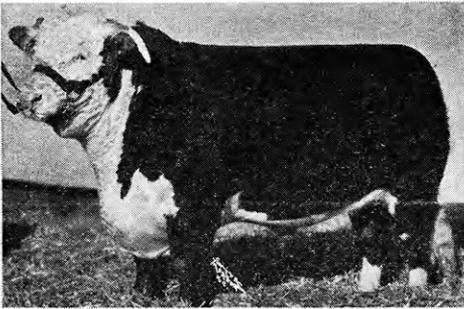
# GENERAL ELECTRIC

## HAZFORD PLACE

*(Continued from page 49)*

maintaining so excellent a herd, his far-sightedness and business ability have caused him to analyze thoroughly the breeding of all beef cattle. This analysis has brought him to realize the great need of improvement in range cattle. Consequently, Hazford Place sires have not only been setting the type and adding beefiness and feeding quality to those cattle in the corn belt sections, but they have also been whitening the faces and adding width and depth to those cattle on the great ranges of the West and the Southwest. In fact, few other places in history have given so many big-boned, masculine-looking bulls for use on the ranges as has Hazford Place.

Hazford Place is not a show place from a standpoint of costly buildings and expensive equipment. The barns are simple, well-built and convenient. The pens are well arranged



**Hazford Tone**

This bull is one of the present herd sires on Hazford Place.

and substantial. Fresh water is abundant. Sunlight is utilized largely. Each barn is equipped with running water, piped from a small reservoir close by. Four windmills hand at all times. Each pen has access to a tank equipped with a float so that these tanks are always full but never running over. Roomy pens and a south slope provide for two essential factors, exercise and dry quarters.

The elevator stands close by three large brick silos, centrally located to the main barns. Here the feed is mixed each morning and distributed by truck from the elevator to the various barns in each of which two men working together have charge of a certain part of the herd. These men are responsible for their particular group the year around. It

is their duty to look after cows at calving time, to keep the records straight, and to see that their cattle are fed regularly. Because of this responsibility the men take great interest in the individuals which they care for. Many of these men have been with Mr. Hazlett for a number of years.

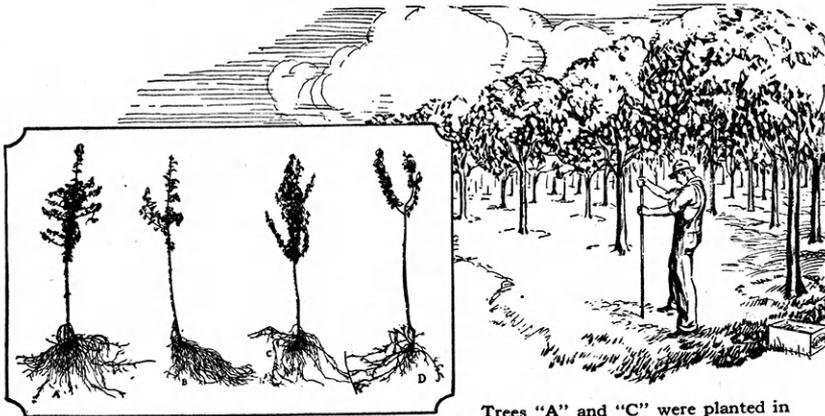
All the manure from the barns and lots of Hazford Place is used to enrich the farm land. Here is grown the greater part of the alfalfa and other roughages which form the principal feed for the older females during the winter.

There is luxuriant growth of bluestem on the uplands. Through light pasturing and careful management, Mr. Hazlett has maintained a stand of grass equal to the stand in pioneer and open-range days. This grass maintains the herd in high condition between frosts. With the exception of cows that are calving, the herd is kept practically out of doors the year around. The result is a strong, vigorous, splendidly coated group of individuals that are on the government accredited list and are free from disease.

While Mr. Hazlett has been beautifying and giving smoothness, symmetry, and quality to his herd, he has retained in his animals the fleshing and easy-feeding propensities that have distinguished the breed.

One of the very noticeable things on Hazford Place is the absence of the great number of nurse cows, yet no herd can boast fatter calves. Long ago Mr. Hazlett adopted a rule of not assisting a big Hereford mother with the feeding of her calf unless that calf's future was especially bright. Instead creeps were substituted in which the young calves may run at all times. This keeps the calf in good condition from the very start and teaches him to eat grain so that he does not miss his mother's milk at weaning time. Up to the age of 18 months all the young stock are given the best feed possible, making for growthy, big-framed animals. The females receive little or no grain after this time.

These are some of the more important factors constituting the system which has given Hazford Place and the name of Robert H. Hazlett a historical niche in the annals of cattle breeding. Kansas is proud to have Hazford Place within her borders.



Trees "A" and "C" were planted in blasted holes. Trees "B" and "D" were planted in unblasted holes. The trees are all of the same age. Notice results both above and below ground. Made from actual photograph.

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**THE EUROPEAN CORN BORER***(Continued from page 47)*

of the ear. This results in a poorly developed ear or a breaking at the shank. As many as fifteen full-grown borers have been found feeding upon or within a single ear of corn. In the infestation of corn fields in Essex and Kent counties, Ontario, during the past season, it was not uncommon to find a hundred full-grown larvae in one stalk of corn. Many fields had an average infestation of from 30 to 40 borers per stalk. Plants so infested are thoroughly honey-combed and many of them fall to the ground. The ears are soft and shriveled, and frequently there is a complete destruction of the crop. In about six weeks, after burrowing through all parts of the plant, the larvae reach maturity, but continue to feed in the stalk or ear until cool weather and later, on the advent of low temperatures, hibernate through the winter within the stalk.

At the present time, as far as known, there is no infestation of this serious pest in Kansas, or in any of the corn-belt states west of Ohio, but since there is a natural spread by the flight of the moths, and some possibility of artificial distribution in spite of drastic quarantines, it probably is only a question of time until the borer will be established throughout the great agricultural states. It is, therefore, highly important that every farmer and every gardener be on guard, and just as soon as an insect or an injured plant is discovered that approximates the description of the European corn borer and its injury, specimens should be sent to the state entomologist or Agricultural Experiment Station in order that any infestation that might be discovered could be dealt with in the incipient state.

In the late fall an infestation may be found while husking corn, either standing or in the shock, or while cleaning up the remnant corn stalks in the truck gardens. The presence of the insect will be shown by a circular entrance less than one-eighth of an inch in diameter, and usually showing a little discoloration around the margins. The entrance holes lead into a gallery, which, if it extends to the node, expands irregularly and frequently has blackened walls. Much of the insect's work will be within three or four feet of the ground. During the winter or spring in cut-

ting or breaking corn stalks, or in husking and handling corn fodder, a close lookout should be kept for infested stalks. In fields which have been pastured, the infested stalks would be noticeable. In cleaning up the gardens, the stalk of any plant or any weed that may have a small hole in it should be saved and later sent to the county agricultural agent, the state entomologist, or the Agricultural Experiment Station.

If everyone will be on the lookout for this insect and will send in all suspicious plants, very probably the pest will be discovered before it has become well established, and thus by striking hard early in the fight, control may be possible or at least the spread of the infestation may be delayed. To neglect our duty at the proper time will permit the pest to get beyond all possibilities of control and then the state will be burdened with big appropriations to fight it. The insect is a hazard to the greatest wealth-producing crop in America, and the seriousness of the situation cannot be over-emphasized.

**POULTRY FOR BREEDING PURPOSES***(Continued from page 43)*

chicks hatched are larger and more vigorous. (2) Pullets usually lay more eggs during the winter than hens. This tends to injure the hatching quality of the eggs laid during the following breeding season. However, if pullets are of March or April hatch, vigorous and well-grown out, the best of the flock may be used as breeders.

The number of hens that can safely be allotted to each male depends to a certain extent upon the breed and vigor of the male. A strong fully-matured cockerel of the medium weight breeds such as the Rhode Island Reds, Wyandottes, and Plymouth Rocks can safely be mated with 12 to 15 females, while with the lighter breeds such as Leghorns or Anconas one male will furnish good fertility with 15 to 20 females.

Exercise is very important and must not be neglected. Scratch grain fed in deep litter compels chickens to scratch vigorously. Green feed is necessary for best results during the hatching season. It furnishes minerals, vitamins, and succulent tonic for body requirements. Birds selected for breeding stock must receive a liberal supply of a well-balanced ration.

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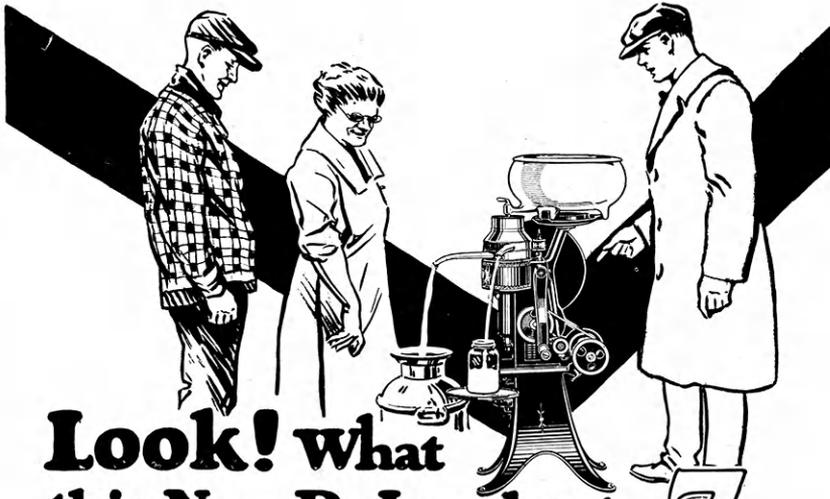
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After separating with your old separator, wash its bowl and tinware in the skim-milk. Hold the skim-milk at normal room temperature and run it through a new De Laval. Have the cream thus recovered weighed and tested. Then you can tell exactly if your old machine is wasting cream, and what a new De Laval will save.

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61 Beale Street

**SIZES**  
Hand-Electric-Belt  
\$6.69 to \$14.30 DOWN  
Balance in 15  
Easy Monthly  
Payments

### Guaranteed to skim cleaner

The new De Laval has the wonderful "floating bowl"—the greatest separator improvement in 25 years. It is guaranteed to skim cleaner. It also runs easier with milk going through the bowl, and lasts longer.

See your De Laval Agent or write us direct.