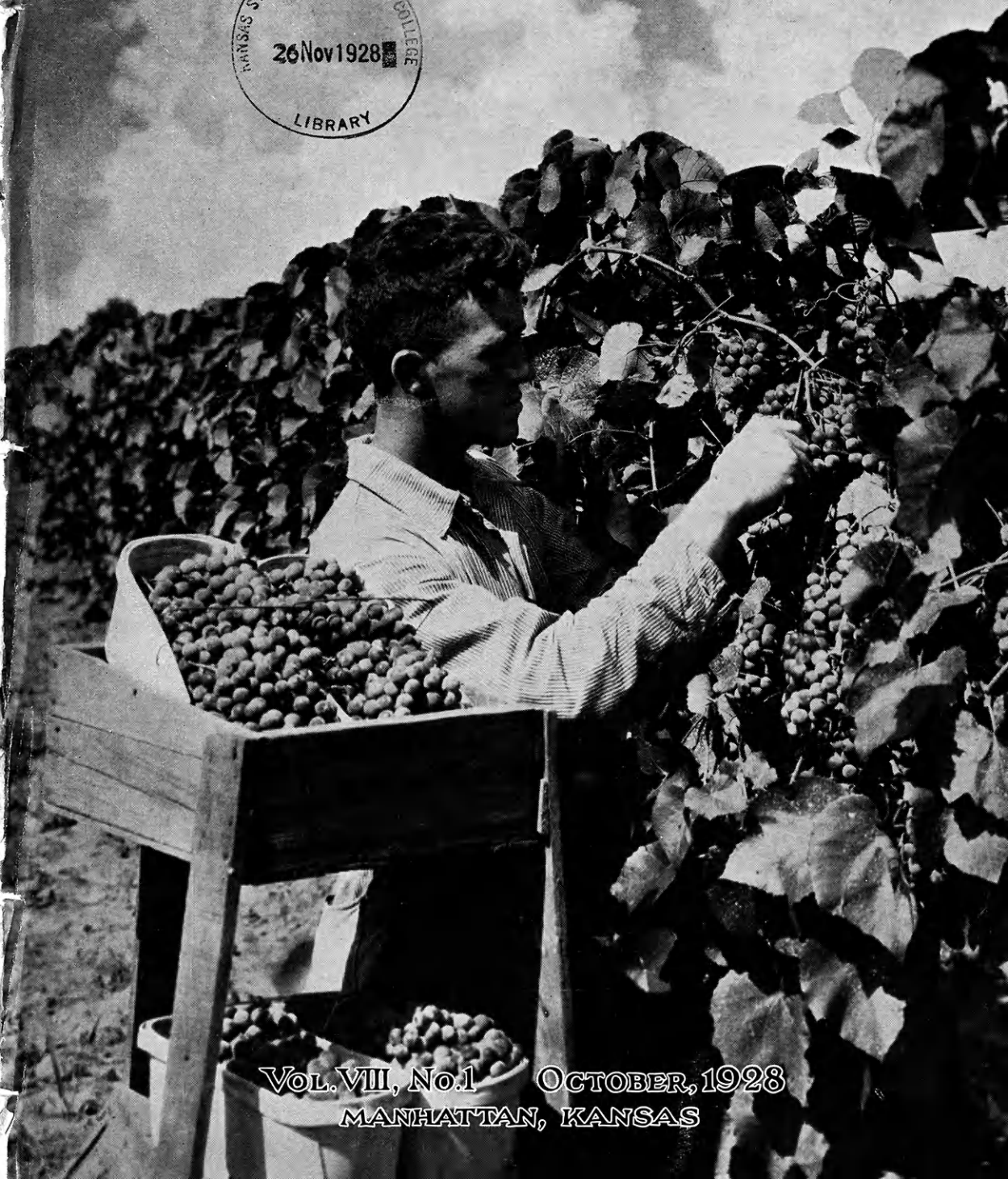


# The KANSAS AGRICULTURAL STUDENT



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VOL. VII, No. 1      OCTOBER, 1928  
MANHATTAN, KANSAS

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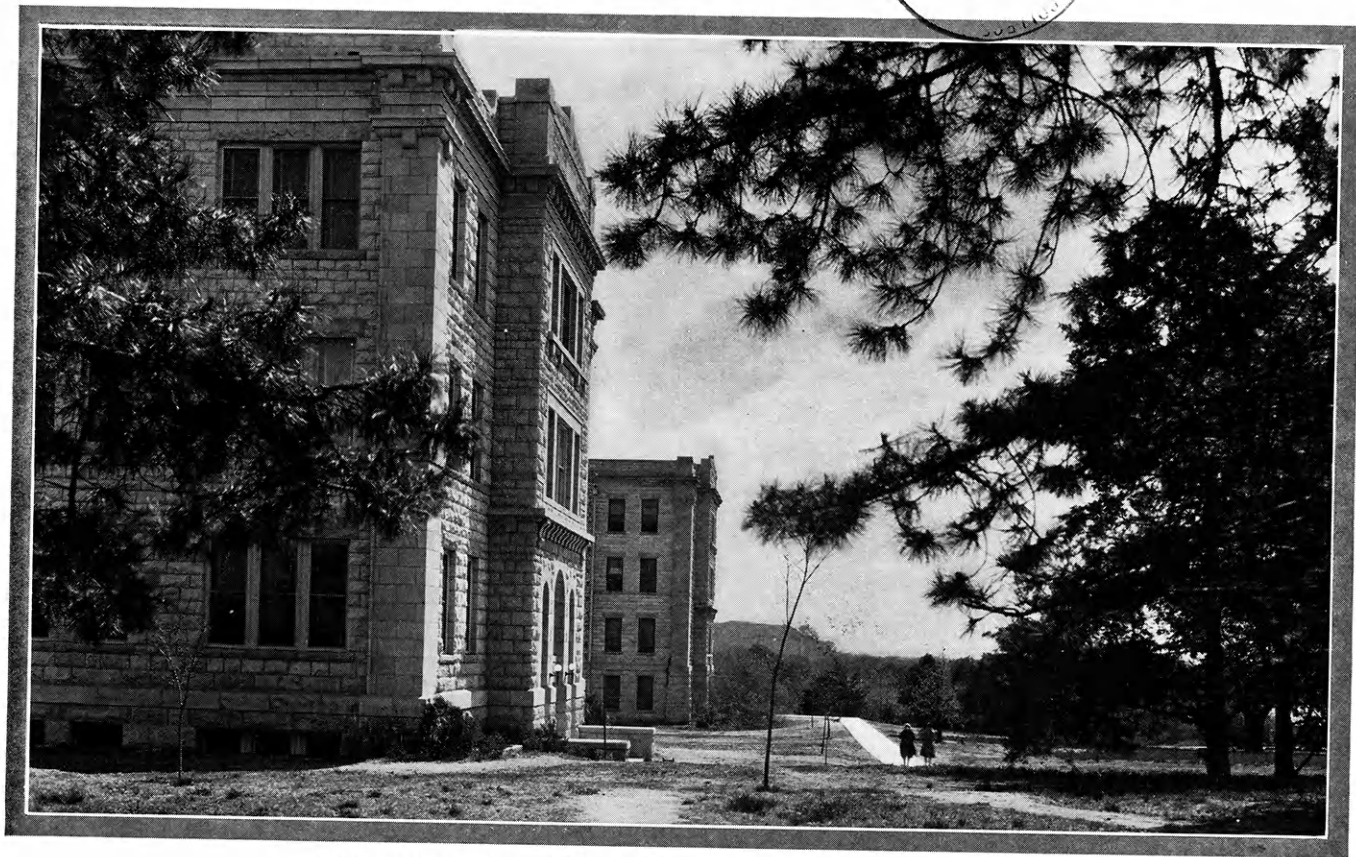
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Published by the Agricultural Association of Kansas State Agricultural College, Manhattan, Kansas, on or before the Twentieth Day of the Months of October, December, March, and May.  
Entered as Second Class Matter, May 21, 1925, at the Post Office at Manhattan, Kansas, under the Act of Congress of March 3, 1879. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized May 21, 1925.



FRONT VIEW OF WEST AND EAST WINGS OF WATERS HALL  
(AGRICULTURAL BUILDINGS)



# The Kansas Agricultural Student

VOL. VIII

Manhattan, Kansas, October, 1928

No. 1  
Nov 1928

## A Tax Program for Kansas

T. G. Betts, '29

Taxation, one of the most important questions in Kansas today, is attracting more and more the interest and attention of the public. To secure improvement that is beneficial, it will be necessary to crystallize this interest into a practical program.

A program has been evolving during the last decade which seems to offer a practical method of securing greater equality in taxation in general, and a larger degree of justice for the owners of farm and city real estate in particular. This program and the various taxes suggested deserve the tax payer's careful consideration.

In Kansas the tax on general property as prescribed by the constitution was well suited to her economic conditions of frontier days. Today our economic life has become more complex which has tended to divide the people into groups of more or less varying economic status and interest. With this progress has gone an increase in public expenditures, resulting from growth in population and the expansion of legitimate functions of the government. With a fiscal system suited to conditions of half a century ago there has resulted a disproportionate part of the public burden being borne by some people while others escape almost entirely.

Of 107 million dollars collected in 1927 by Kansas state and local governments, 92 million was raised by the general tax on property and 15 million by indirect methods, or in other words, property paid 85 cents out of every dollar paid in taxes while only 15 cents was collected from other sources.

The proposed program would tend to keep the total appropriation within reasonable limits and to increase the per cent raised by indirect taxation to 20 or 25 per cent instead of the present 15 per cent. To do this the program suggests that the gasoline, motor license, and cigarette taxes which amount

to more than \$9,000,000 annually be supplemented by other indirect taxes to help run the state government. Five new forms of taxation are suggested; namely, (1) a personal income tax, (2) a gross production tax on minerals in the state, (3) a tax on tobacco, (4) a tax on non-alcoholic beverages, candy, chewing gum, perfumes, and cosmetics, and (5) a tax on theater admissions.

Dr. W. E. Grimes and Professor Harold Howe of the Department of Agricultural Economics have made a study of the situation in regard to the taxation problem and by getting data from the different states of the Union have attempted to determine to what extent the sources of taxation suggested are used in the United States. As a result of this study they are able to make a reliable estimate as to the amount of revenue which could be derived from each of the possible new sources of taxation.

The personal income tax which is now levied by 12 states and the federal government, would in all probability, if patterned after the federal income tax, yield 3½ million dollars, which is the amount of income tax paid to the federal government by Kansas people each year.

A gross production tax on minerals which is now levied in Oklahoma, Louisiana, Texas, Minnesota, Pennsylvania, Alabama, and West Virginia would yield approximately \$2,750,000, estimating on the basis of a 3 per cent tax on petroleum and natural gas which constitute two-thirds of the total value of the natural resources annually mined in Kansas. The remainder would be secured from a 2 per cent tax on coal, salt, lead, zinc, stone, and several minor mineral products.

An excise tax of 5 per cent on tobaccos used in Kansas would yield a revenue of approximately \$1,500,000 annually. This estimate is based on figures secured by the Re-

search Department on Church and Social Service of the Federal Council of Churches in America. This body has estimated that \$1,750,000,000 is spent for tobacco in the United States each year. By computing that the average Kansan spends as much for tobacco as the average person in the United States, Kansas expenditures would be approximately \$30,000,000 per year and an excise tax on tobacco of 5 per cent would yield \$1,500,000.

It is estimated by the same organization making a similar computation as quoted on the tobacco excise tax, that \$1,783,000,000 is spent annually in the United States for non-alcoholic beverages, confections, etc. Making the same computation, expenditures for Kansas would be \$30,000,000 annually

and an excise tax of 5 per cent would yield \$1,500,000.

An excise tax of 10 per cent on theater admissions would yield approximately \$750,000. This estimate is based on the experience of the federal government with such a tax.

The 10 million dollars resulting from these suggested sources would, provided there would not be the tendency to increase expenditures, eliminate the direct levy on property for state purposes, and would remove the present inequalities of assessments among counties. If this 10 million dollars were subtracted from the 92 million now collected from real estate and personal property, leaving only 82 million, it would make possible a reduction of approximately 11 per cent in property taxes, which would be a direct aid to the property owners in Kansas.

## County Project Exhibits

H. D. Garver, '29

County exhibits with their vast array of farm products are an accepted part of any state fair. Their popularity is well deserved because in no other way can the agricultural possibilities of a county be so forcibly presented to the state as a whole. Last year at the Kansas State Fair at Hutchinson a team mate for the county exhibit made its appearance for the first time, the county project exhibit.

This exhibit, entirely of an educational nature, makes its appeal not by a large number of units but by one central idea. This idea is based on some important project being carried on by the farm bureau of the county represented. County project exhibits during the past two years have been presented on poultry, Hessian fly control, rodent control, legume production, farm cost accounting, and better live-stock feeding. This great variety of projects has made them a broad and marked educational feature of the last two state fairs at Hutchinson and has made competition both interesting and keen.

It almost goes without saying that county project exhibits at a state fair must compete for honors. Some of the details of the contest may be of interest to the reader. In the

first place, floor space allows but five exhibits to be shown. In order that all the farm bureaus have an equal chance each one is allowed to submit detailed plans of the proposed exhibit to the extension office at Manhattan. A committee then selects the five best plans on August first, allowing about six weeks for preparation of the exhibits.

In judging the county project exhibits a score card is used and the final placing based on the final score. Special emphasis is given to "power to attract attention" and to hold the interest while the story is told or argument presented, and finally to clinch the argument in such a way that there is created a desire on the part of the observer to adopt the practice recommended. To do all this the score card allows points for originality, use of lights, color, action, and arrangement of maps, charts, and literature in such a way as not "to detract from the central idea."

A brief description of the exhibit from Riley county will give an idea as to how these main points were attempted to be carried out. The exhibit represented the legume projects of the county. The central idea "Legumes" was represented by a doll dressed

(Continued on page 8)

# Good-Type, Creep-Fed, Beef Calves Net Farmer Good Profits

O. W. Greene, '29

Early calves, creep fed, from cows of good beef type, netted G. H. Lumb a good margin in beef production. Mr. Lumb, who owns and operates a diversified farm near Wakefield, Clay county, Kan., produced this particular group of baby beeves as a demonstration carried on in cooperation with K. S. A. C. J. J. Moxley, extension specialist in animal husbandry, and C. R. Jaccard, county agricultural agent of Clay county, were the college representatives actively participating in the demonstration.

Four lots of calves were used in this demonstration. Lot 1 were early calves from good-type beef cows and creep fed. Lot 2 were early calves from poor-type cows and were creep fed. Lot 3 were early calves from good beef-type cows and were not creep fed, and lot 4 were late calves from good beef-type cows and they were not creep fed.

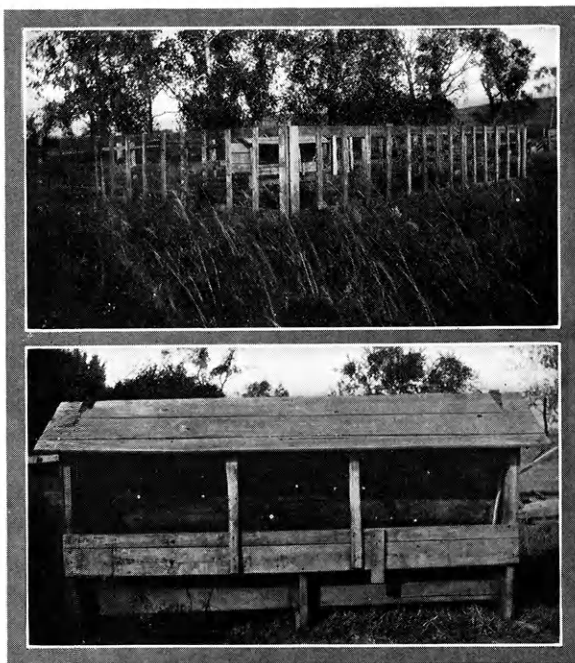
The wintering ration for the cow herd was cane silage, alfalfa hay, corn fodder, and cane hay. The early calves were born in January and February while the late calves were born in April. The cow costs were figured on a basis of a 95 per cent calf drop obtained on this farm. The expense of producing this crop of calves on this farm was as follows:

Wintering cost per cow .....	\$8.22
Pasture charge per cow .....	8.00
Interest, taxes, depreciation .....	6.00
Bull charges .....	2.00

Total cost per cow .....\$24.22

All the calves ran with their dams throughout the demonstration. Lots 1 and 2 ran together and lots 3 and 4 together.

The creep feeder is constructed so as to allow the calves access to grain to the exclusion of the cows. The creep should be so constructed as to allow the calf to walk through it easily. If the top boards are too low the calf may injure its back when going through and the packer discriminates heavily against bruises. The creep should be located where the calves have easy access to shade and plenty



CALF-FEEDING CREEP AND SELF-FEEDER

This illustration shows the calf-feeding equipment used in the Lumb farm demonstration. For clearness of detail the self-feeder is shown below, though by careful observation it may be located within the creep shown above.

of water. Both of these are essential for the production of good beef calves. The accompanying illustration shows the creep used by the calves in lots 1 and 2 of this demonstration. The self-feeder may be seen in the creep but is shown below for greater detail.

The 53 calves on the creeps in this demonstration ate 20 bushels of corn in February, 50 bushels in March, 100 in April, 54 in May, 74 in June, 75 in July, 120 in August, and

110 in September to September 22, when they were marketed, a total of 603 bushels.

Such a management practice allows a man to maintain a small herd on a small diversified farm. This enables him to utilize his rough feeds and pasture to a decided advantage. Following such a practice the feeder does not have to go to the market to buy his stockers and feeders to utilize his field crops as he has produced them himself. It makes a more stable and sound farm business.

From the economic viewpoint it is primarily a rapid turnover business operation. By early calving a farmer can feed the calves through the spring and summer with a comparatively small outlay of labor and be able to market them early in the fall on the high market. In this demonstration calves fed grain while nursing were valued at \$79.78 when weaned at 250 days of age. Similar calves getting no grain were valued at \$60 each.

Three conclusions may readily be drawn from this demonstration as follows:

1. It pays to use good cows of beef type and to obtain the best results a purebred bull of quality and good type should be used. This procedure gives offspring that yield a high-quality carcass in great demand by the packer and consumer. The old doctrine that good type pays was certainly proved in the results obtained.

2. Calves must be born in January or February. The early calf has a much better opportunity to learn the taste of grain before going on grass than does the calf that is born late. Another advantage is that early calves can be vaccinated for blackleg and castrated early without the high loss of weight necessary if these operations were to be performed later on after grass has started. If the calves have learned to eat grain they will be able to keep up gains all through the summer even when the grass is short. They will also be large enough to sell in the early fall when the market is usually the best.

3. Creep feeding pays. Early calves from good-type, creep-fed cows gave the owner a margin of \$45.66 while early calves from good cows that were not creep fed yielded him a margin of only \$35.78, a difference of \$9.88 in favor of creep feeding. Early calves from poor-type cows, creep-fed, yielded the owner a margin of \$29.75 while late calves from good-type cows not creep fed gave him a margin of only \$26.40, a difference of \$3.35 in favor of the creep feeding. Higher finish and greater weight are obtained by creep feeding.

**Summary:** Early calves, creep-fed, from good-type beef cows, is a paying proposition for the diversified farmer.

The results obtained in the demonstration are shown in the following tabulation:

	CALVES CREEP FED		CALVES NOT CREEP FED	
	LOT 1 Early calves from beef-type cows	LOT 2 Early calves from poor-type cows	LOT 3 Early calves from beef-type cows	LOT 4 Late calves from beef-type cows
Weight per calf, September 22....	591 lbs.	511 lbs.	480 lbs.	405 lbs.
Market value at feed lot, Kansas City price less 50 cents per cwt.....	\$13.50	\$12.50	\$12.50	\$12.50
Market value per calf, September 22 .....	\$79.78	\$63.87	\$60.00	\$50.62
Feed cost per calf .....	\$ 9.90	\$ 9.90	.....	.....
Cow expense per calf .....	\$24.22	\$24.22	\$24.22	\$24.22
Margin per calf .....	\$45.66	\$29.75	\$35.78	\$26.40

E. R. Honeywell, '26, and Mrs. Honeywell announce the birth of a daughter. Mr. Honeywell is assistant professor of floriculture on the Purdue university faculty.

A. W. Foster, '20, is in charge of sales for the Puget Sound and Alaska Powder Co., Spokane, Wash. Mr. Foster's address is 501 Rookery Bldg., Spokane, Wash.



# A Mechanical Corn Picker Is a Great Labor Saver

F. C. Fenton

Head of Department of Agricultural Engineering

The farmers of the United States are now engaged in harvesting their greatest crop—more than one hundred million acres of corn. It is a tremendous task and one which costs between \$300,000,000 and \$400,000,000 to accomplish.

Many different methods of harvesting corn are used and the cost varies from 5 or 6 cents to 18 or 20 cents per bushel. On a great many of the smaller farms the corn is cut by hand, shocked in the field, and allowed to stand until dry. Later these shocks are opened up and the ears removed and thrown into a pile upon the ground. The stalks are tied up in bundles to be later hauled into the barn for feed. The piles of corn are collected in baskets and dumped in the wagon, hauled to the crib, and shoveled out.

The farmer of the Middle West who husks the standing corn, throws it directly into the wagon, and hauls it to the crib where a power elevator handles it for him, would consider the above plan of husking corn extremely wasteful of time and labor. The corn grower who is accustomed to harvesting his corn with a mechanical picker pulled by a tractor and operated by a power take-off directly from the tractor, considers all hand methods of husking slow and burdensome as well as wasteful.

Improved machinery for growing corn has

developed more rapidly than machinery for harvesting. Corn husking still remains the one big farm operation where hand methods still prevail. One man can plow from five to fifteen acres and can prepare the seedbed even more rapidly. Men are planting and

cultivating from 25 to 45 acres per day. But, if a man picks corn by hand, he can cover only one to two acres per day, depending on the yield. With a tractor-operated mechanical corn picker, however, he can cover eight to ten acres in a day, gathering more corn than six average corn huskers.

The mechanical picker reduces the number of men required to harvest corn and reduces the cost of har-

vesting in some instances to about half. It also relieves the farmer of one of the most disagreeable and monotonous farm tasks.

Let us analyze the cost of picking corn by machines and by hand. There is, of course, a wide variation in costs depending upon yield per acre, wages paid, and a number of local conditions. In the case of the machine picker, the largest item of influence is the number of acres husked per year. It has been ascertained that machine depreciation is about the same regardless of the number of days the machine is used.

One hundred dollars per year is a liberal allowance for depreciation, interest, and repairs on a corn picker. Assuming the area



A MECHANICAL CORN PICKER READY FOR WORK

husked to be 100 acres, the machinery cost would be \$1 per acre, which on a yield of 50 bushels per acre would be 2 cents per bushel. Add to this the cost of the tractor at \$8 per day, two men at \$4 each, and a team at \$2 per day, or a total operating cost of \$18 per day.

This outfit will harvest nine acres of 50 bushel corn or a total of 450 bushels per day at a cost of 4 cents per bushel. Add the 2 cents per bushel for the picker and we have a total of 6 cents per bushel. This cost may be reduced by higher-yielding corn or by using the machine on more acres per year. The tractor and labor costs are also higher than would be figured if the men were regularly employed and the tractor used throughout the year for general farm work. In many cases the cost is as low as 4 cents per bushel.

Compare these figures with the 6 to 8 cents per bushel now being paid transient labor for hand picking, to which must be added the cost of team and the man's board and lodging. The total cost for hand picking thus ranges from 8 to 12 cents per bushel or higher for unusual conditions.

Many farmers whose acreage is large enough to warrant the use of a mechanical picker are saving from 4 to 6 cents per bushel on their corn. On a hundred acres of corn yielding 50 bushels per acre, the saving would be \$200 to \$300, besides more rapid work and freedom from the troubles of extra help. It is little wonder that some farmers declare that the corn picker paid for itself the first year.

The quality of work done by the two methods will vary greatly. Unbiased observers report that there is little difference where conditions are similar. Some corn will be left in the field no matter what method is used. The personal element enters in here, and while it is possible to husk corn cleaner by hand than can be done by the mechanical picker, the average hired man doesn't actually do so.

The mechanical corn picker has been improved rather slowly. The use of the power take-off was one of the most important steps to improve its operation. Undoubtedly there is room for improvement in this important piece of labor-saving machinery before it will be used generally by corn-belt farmers.

## COUNTY PROJECT EXHIBITS

(Continued from page 4)

as a queen and sitting on a throne. Her six ladies in waiting were also dolls standing about her bearing the labels "Lime," "Inoculation," "Moisture," "Fertilizer," "Native Seed," and "Seed Bed." These represented the constituents of legumes. Action was provided by a continuous procession consisting of a toy dairy cow, beef cow, horse, sheep, and hog, and a representation of cash crop and soil. As each unit passed in front of the queen she lowered her wand in acknowledgment. The main mechanism consisted of an old hay rake wheel, bicycle wheel, and a small motor. For the sake of brevity details will not be given. This was to hold the interest while charts and maps presented the argument. The scene represented the interior of a castle effected by the use of stone design crepe paper over a frame work. Attention was first attracted by a concealed small bell, and also by a sign, "Legumes, the Life of Riley County," on the outside of the castle between the battlements.

Each of the exhibits required much work and were not inexpensive. However, the large crowds in front of all the exhibits gave evidence that they were worth while.

---

F. M. Alexander, '24, is farming near Wellington. In college Mr. Alexander majored in agronomy.

---

A. M. Paterson, '13, is assistant secretary of the American Royal Live Stock Show, Kansas City, Mo.

---

R. E. Lofinck, '16, is teaching agriculture in the Antelope Valley Joint Union high school, Lancaster, Calif.

---

A. W. Stover, '24, visited the college the latter part of September. He is engaged in commercial greenhouse work in Blackfoot, Idaho.

---

Kenneth W. Knechtel, '27, is farming near Martin City, Mo., on the farm of Mr. William Ferguson. Kenneth has a stock share lease proposition in which he hopes to make good in the long pull.

# K. S. A. C. Record Hen

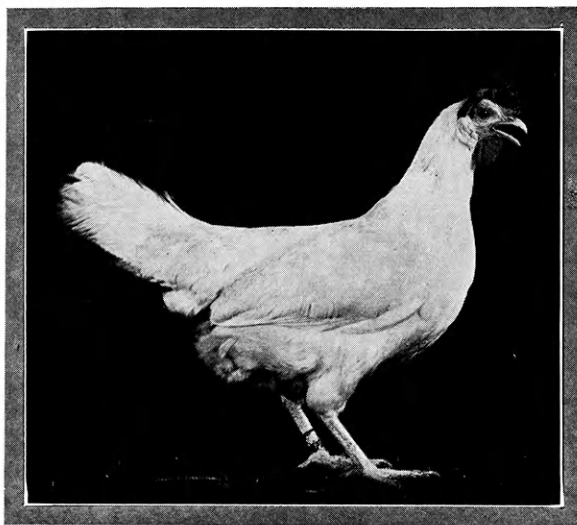
D. C. Warren

Associate Professor of Poultry Husbandry



When Queen Kanegga laid her 305th egg, September 26, 1928, a new record was established at the K. S. A. C. poultry plant. She is a Single Comb White Leghorn and presents a good example of the combination of high production tendencies with good standard qualities.

This is the first time that the K. S. A. C. poultry plant record has reached the three-hundred



QUEEN KANEGGA

mark although on two different occasions records of 299 were made. It is of interest to note that Queen Kanegga is the granddaughter of one of these 299-egg hens. Except for her dam who died before the completion of her first year's record, Queen Kanegga's ancestors for three generations were in the 250-egg class or better.

(Continued on page 12)

1927-1928				EGG RECORD OF NO. 2083 A																												S. C. W. LEGHORN			
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL			
SEPT.																										X				X	1				
OCT.																															21				
NOV.																														X	26				
DEC.																															15				
JAN.																															23				
FEB.																													X	X	25				
MAR.																															30				
APR.																														X	28				
MAY																															30				
JUNE																													X	24					
JULY																															31				
AUG.																															28				
SEPT.																										X					23				
GRAND TOTAL																														305					

MODEL OF FIRST YEAR EGG RECORD OF QUEEN KANEGGA

# THE KANSAS AGRICULTURAL STUDENT

KANSAS STATE AGRICULTURAL COLLEGE  
MANHATTAN-KANSAS

VOL. VIII

OCTOBER, 1928

NO. 1

Published quarterly during the school year by the Agricultural Association of Kansas State Agricultural College. Subscription rate: One year, 75 cents; four years, in advance, \$2.00; single copies, 20 cents. Advertising rates sent on application. Address all communications to The Kansas Agricultural Student, Manhattan, Kansas.

Entered as second-class matter, May 21, 1925, at the post office at Manhattan, Kansas, under the Act of Congress of March 3, 1879.

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## ALPHA ZETA

We, the upper classmen in the "Ag Division," extend a welcoming hand to our 140 first-semester freshmen and urge them to maintain or improve on the standards heretofore set by the division. It will require leadership to do this. This leadership must be developed from the material in the freshman class. The men in the class who will be college leaders three years from now probably have already selected a goal to strive for.

There is one goal toward which each freshman should strive. This is membership in the honorary agricultural fraternity of Alpha Zeta which is open only to male students in the Division of Agriculture who have had at least three semesters of work in the division.

Alpha Zeta requires several things of a man who would be a member. The requirements, though rigid, are not beyond the possibility of attainment and tend to develop the individual in all his leadership possibilities. A few of the requirements are: The individual must be in the upper two-fifths of his class in scholarship; he must be of good moral character; and he must show that he has ability as a leader.

Though scholastic standing is stressed, yet

leadership is stressed as much or perhaps more because it is possible for an individual to attain a high scholastic standing and yet not be able to lead people so they will benefit from what he has learned and wishes them to learn. If agriculture is to be improved in future years it must have leaders, and it is from the agricultural colleges that we are expecting our agricultural leaders of the future.

During each semester at different times there will arise opportunities for performance that will show exceptional skill and ability. Through the grasping of these opportunities certain freshmen are going to stand out and others lag behind. The upper-classmen, and especially members of Alpha Zeta, are watching the freshmen to see how they perform, to see who are showing both outstanding records in their classes and marks of distinction in the activities of the division. Those who are so recognized will be honored promptly by election to membership in Alpha Zeta.

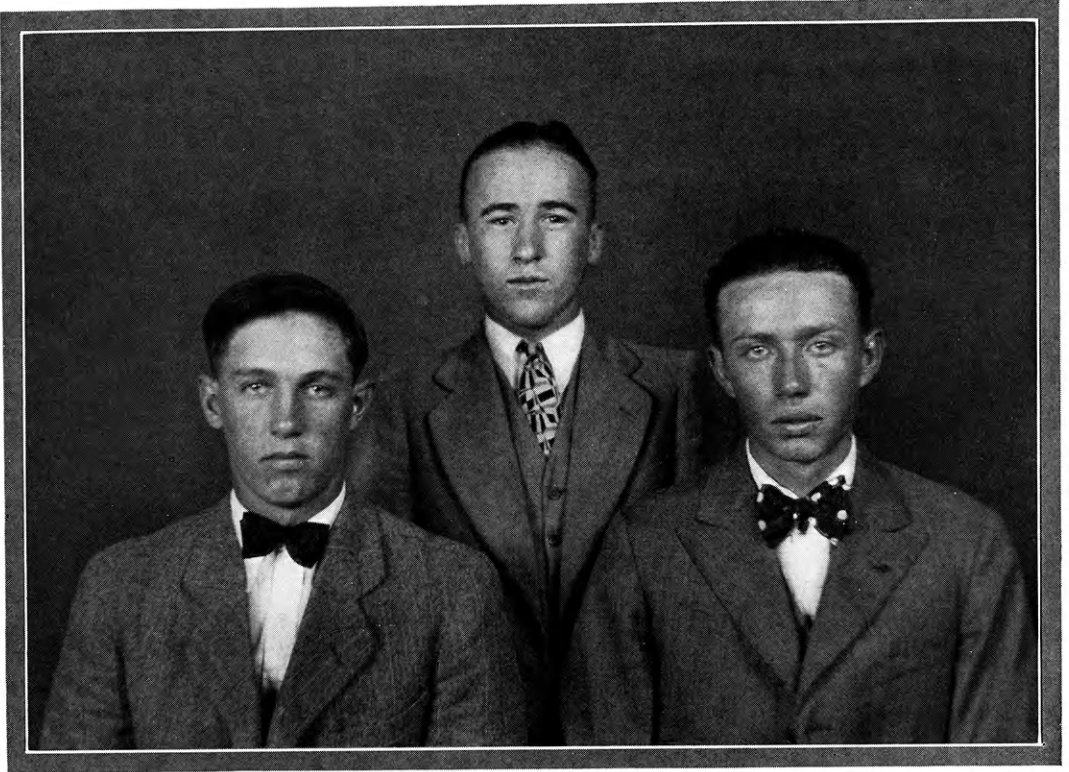
## ARNOLD E. CHASE WINS FRESHMAN ALPHA ZETA MEDAL

As a means of stimulating scholarship the honorary agricultural fraternity of Alpha



Zeta announced in the spring of 1921 that it would award a gold medal annually to the freshman of the Division of Agriculture highest in scholarship. The Kansas Agricultural Student has the pleasure of announcing the seventh annual award. The winner is Arnold E. Chase of Manhattan. Alonzo S. Lambertson of Fairview was a very close competitor and deserving of honorable mention. Lot F. Taylor placed third.

lege career with such a first-year record, among new associates and competitors for honors, is making an outstanding success in a new undertaking. The Kansas Agricultural Student is, therefore, especially glad to commend the three freshmen in the division of agriculture last year whose scholarship standing is at the top of the list. All three are enrolled as sophomores this year, continuing, we believe, the good record they



ALONZO S. LAMBERTSON, ARNOLD E. CHASE, AND LOT F. TAYLOR

The scholarship of these three freshmen students in the Division of Agriculture in 1927-'28 placed them on the high honor roll for their class. Each is pursuing sophomore work in the division this year.

Scholarship figures on these three high freshmen for 1927-'28 will be found in the "Honor Roll" for the division printed elsewhere in this issue.

#### **HIGH FRESHMEN IN AGRICULTURE, 1927-'28**

To be on the high honor roll of any class is a mark of real distinction. To start a col-

made last year as freshmen. A fair likeness of these young men is presented in the accompanying illustration.

Arnold E. Chase by a narrow margin placed first in the class. His placing won for him the Alpha Zeta medal for 1927-'28. Mr. Chase was born on a farm near Abilene and was graduated from the Abilene high school in 1927. As a 4-H club member, with

a baby beef project, he won the championship of Dickinson county in 1925. His award was a trip to the American Royal Live Stock show. In 1926 he won the county championship in grains with a kafir project. His award this time was a trip to the 4-H club roundup at K. S. A. C. On his club work in 1927 he won a 100-dollar Union Pacific scholarship and was realizing on this educational assistance when he made his record as high freshman in agriculture in K. S. A. C.

Alonzo S. Lambertson was graduated from the Fairview rural high school in 1927. In 4-H club work he was a member of a pig club one year and of a calf club one year. In his senior year in high school he took vocational agriculture, the work having just been introduced in the Fairview school. He was selected as the most all-round efficient student in his class in vocational agriculture for the year and awarded a 100-dollar Union Pacific scholarship in K. S. A. C.

The home of Lot F. Taylor is on a ranch 10 miles north of Ashland. He was graduated from the Ashland high school in 1927. His freshman record in K. S. A. C. speaks for his faithfulness and efficiency.

### AGS AND THE OVERALLS

Whenever their work justifies or practically requires work clothes most Ags do not hesitate to wear overalls. Why not? Are college students workers? Or are they supposed to be at a dress parade or at a party, or a reception? Is there any reason why to go through Anderson Hall or to cross the campus to shop, judging pavilion, or cattle barn, students should be dressed as if they were going to a social function? The custom of wearing on the college campus and at college duties clothes appropriate to the task at hand, is one of which K. S. A. C. may be proud. The Ags are glad to have a part in upholding the custom.

On certain occasions the Ags wear overalls primarily to announce an activity or function of their division. This is especially true of the Barnwarmer in the fall and the Ag Fair in the spring. As such an announcement this uniform dress of the division is a bit of publicity worth while. But above the publicity, the wearing of this particular, dig-

nified working uniform has a real and valuable significance to the division and to the institution. It is one way of silently proclaiming the democracy of K. S. A. C. Not a few teachers of recognized standing in other divisions of the college have remarked on these days of Ag overalls, "How good they look and how well they can work today," or, "I wish they would wear those uniforms to my class every day."

### K. S. A. C. RECORD HEN

(Continued from page 9)

The model of Queen Kanegga's record shown in an accompanying illustration has a number of interesting features. This shows her first year's record, which, according to the K. S. A. C. system of record keeping, starts when a pullet lays her first egg. Since she laid her first egg on September 27, 1927, September 26 of the next year closed her pullet year. The crosses used at the end of the lines mark those months which have less than 31 days and do not constitute a part of the year.

It will be seen that Queen Kanegga laid her first egg and missed the next six days. She laid regularly for some days after her first year closed. By shifting her beginning date to October 4 and giving her the advantage of her best 365-day record, the number of eggs laid is increased to 309.

During December there was a disease outbreak in the house in which Queen Kanegga was kept and this probably accounts for the slowing up in rate of production during this month and the following one. Her best period of continuous production began on April 13 when she laid an egg on 47 consecutive days. She also laid every day of August, adding a few for good measure at the end of July and the beginning of September.

As is the usual practice at the college poultry plant, Queen Kanegga was not used as a breeder during her pullet year. During the coming breeding season she is to be mated with one of the best available males for the reproduction of her kind.

James S. Stewart, '22, is farming near Coldwater, Kan.

# COLLEGE NOTES

## NEW MEMBERS OF ALPHA ZETA

Announcement has just been made of the fall elections to Alpha Zeta membership. Since one of the eligibility requirements is three semesters of residence work in the Division of Agriculture, only seniors and juniors, as a rule, are elected to membership in the fall. Those recently elected are:

### SENIORS

Name	Home Address
Henry C. Abell.....	Riley
Terrell W. Kirton.....	Amber, Okla.

### JUNIORS

Name	Home Address
John W. Decker.....	Holton
Andrew P. Grimes.....	Greenwood, Mo.
Orville E. Hays.....	Manhattan
C. Porter McKinnie.....	Glen Elder
F. A. Mueller.....	Sawyer
Walter P. Powers.....	Netawaka
Fredrick H. Schultis.....	Sylvan Grove

These nine students will be initiated Thursday evening, November 1. At the same time J. W. McColloch, professor of entomology, will be initiated. Professor McColloch was elected an associate member last spring but because of sickness was unable to be initiated at the spring initiation.

The initiation banquet will be held at the college cafeteria Friday evening, November 2, 1928.

## SECOND ANNUAL BARNWARMER

The second annual Barnwarmer, held October 12, 1928, was started by a long climb up a ladder into the south side of the gymnasium. Upon entering, the decorations, consisting of corn fodder, baled hay, and shrubbery made the overalls and aprons worn by the Ags and "Aggettes" seem appropriate.

The big event with which the evening was opened was the crowning of Miss Elsie Nuss of Hoisington, Kan., as the Queen of the second annual Barnwarmer. Miss Nuss was

brought in on a throne of baled hay and presented to Dean Call who crowned her. Miss Nuss is a senior in home economics and a member of the Pi Beta Phi sorority.



MISS ELSIE NUSS, QUEEN OF THE SECOND ANNUAL AG BARNWARMER

After being crowned, Miss Nuss, escorted by Dean Call, led the large group of Ags around the gym in a stately march. As soon as the gym had been circled two or three times partners started dancing to the time of the wonderful music furnished by June Layton and his Rhythm Rustlers. Those who did not care to dance went to the girls' gym where they were entertained by music and games.

The refreshments, so acceptable for this

occasion, were apples, cider, and doughnuts placed around the fence where they were easily obtained by everyone. Also a weiner roast was held south of the building just outside of the girls' gym.

After the dance each Ag hurried his Aggette home and returned for the cleanup. By morning no trace of the festival could be seen.

The Ag division can put over the big things it does because of the fine spirit of cooperation shown by everyone. The Barnwarmer emphasized neighborliness and democracy bringing almost 100 per cent of the Ags together in a jolly, wholesome time. This year's event was not expensive nor elaborate but fully worth while and set a good example for succeeding occasions.

### HONOR ROLL, 1927-28

Ninety-one students in the Division of Agriculture during the college year, 1927-28, received special commendation for outstanding achievements in scholarship. Each of these students carried on regular assignment not less than fifteen credit hours of work each semester (1), had practically no delinquencies against him throughout the year, and made a total of not less than fifty points on his two assignments, according to the K. S. A. C. point system (2).

The three highest ranking students in each class were given special mention as winners of high honors. The names and home addresses of the group winning "high honors" and the group winning "honors" are given below:

### HIGH HONOR ROLL, 1927-28

Seniors	Home P. O.	Credit hours passed	Total points
Morris Halperin	Manhattan	48	107
F. Leonard Timmons	Geneseo	38	101
Clarence O. Jacobson	Manhattan	37	92

1. A student carrying less than 15 credit hours a semester was required to make a total of 60 points to win a place on the honor roll.

2. Passing grades given last year in K. S. A. C. were, from lowest to highest, P, M, G, and E. Each credit hour with a grade of "M" gave the student one point. Each credit hour with a grade of "G" gave two points, and each credit hour of "E" three points. No student will be graduated unless his total number of points earned at least equals the total number of credit hours required in his curriculum. (Beginning September, 1928, the passing grades given by K. S. A. C., from highest to lowest, are A, B, C, and D.)

### Juniors

Hobart P. Blasdel	Sylvia	37	105
Leonard W. Koehler	Fairmount, Mo.	36	98
Henry C. Abell	Riley	38	87

### Sophomores

Andrew P. Grimes	Greenwood, Mo.	42	125
John J. Curtis	Toronto	39	106½
Raymond W. O'Hara	Blue Mound	34	96

### Freshmen

Arnold E. Chase	Manhattan	37	89½
Alonzo S. Lambertson	Fairview	38	88½
Lot F. Taylor	Ashland	37	82

### HONOR ROLL, 1927-28

Seniors	Home P. O.	Credit hours passed	Total points
I. Milburn Atkins	Manhattan	24	61
Milburne C. Axelton	Manhattan	31	52
Drew E. Bellairs	Cherryvale	36	52
Hale H. Brown	Edmond	37	65
Clarence E. Crews	Elk Falls	32	63
Clarence K. Fisher	Fellsburg	38	66
E. Wayne Frey	Manhattan	34	53
Forrest H. Hagenbuch	Troy	33	51
Eldon T. Harden	Centralia	36	67
Howard W. Higbee	Climax	34	60
Sherman S. Hoar	Willis	34	66
Elmer F. Hubbard	Linwood	35	63
Ragnar N. Lindburg	Osage City	33	69
Verl E. McAdams	Clyde	38	64
Philip B. McMullen	Stella, Nebr.	37	52½
Leroy E. Melia	Ford	34	71
Harold E. Myers	Bancroft	32	65
Kiril P. Nickoloff	Razgrad, Bulgaria	38	50
Albert H. Ottaway	Oswego	30	62
Vance M. Rucker	Manhattan	32	67
Lonnie J. Simmons	Manhattan	23	59
Harvey J. Stewart	Topeka	33	66
Donald N. Taylor	Americus	37	82
George B. Wagner	Whiting	34	55
James R. Wells	Bolivar, Mo.	36½	63

### Juniors

Silas S. Bergsma	Lucas	34	54
James L. Blackledge	Sheridan, Wyo.	38	75
Robert F. Brannan	Meade	35	58
Francis E. Carpenter	Wakefield	32	67
E. Garth Champagne	Oketo	35	64
Tudor J. Charles	Republic	39	72
Norman Curtis	Toronto	34	72
Clifford C. Eustace	Wakefield	33	57
Theodore R. Freeman	West Plains, Mo.	33	64
Fred L. Huff	Chapman	37	56
Francis W. ImMasche	Saffordville	35	55
Samuel G. Kelly	Seymour, Mo.	36	86
Ralph O. Lewis	Parsons	34	68
Vernor I. Masters	Natoma	35	57
Albert W. Miller	Manhattan	32	72
John W. Roussin	Brewster	33	65
Marion L. Russell	Garden City	37	67
James H. Sutton	Ensign	39	67
Ivan K. Tompkins	Byers	30	52
Richard M. Wilson	Geneva	36	55½
Temple F. Winburn	De Kalb, Mo.	36	54
Leslie M. Wolfe	Johnson	42	75

### Sophomores

Roy E. Bonar	Washington	38	68
Albert Brown	Circleville	38	81½
George J. Cunningham	Manhattan	36	69
John W. Decker	Holton	35	56½
William W. Gosney	Goddard	38	61
Ray M. Hoss	Potwin	37	75
Eugene M. Leary	Lawrence	37	64
William D. Lyon	Faulkner	36	57
Charles Mantz	Preston	35½	56
Paul A. Mears	Simpson	34	50
Wilmer A. Meyle	Holton	36	66
Fay A. Mueller	Sawyer	34	62
William M. Newman	Centralia	37	51
Oscar Pike	Partridge	37	53



Walter P. Powers.....	Netawaka .....	35	77½
Francis J. Raleigh.....	Clyde .....	40	85½
Louis P. Reitz.....	Belle Plaine .....	31	81½
Hugh K. Richwine.....	Holcomb .....	37½	51½
Miner R. Salmon.....	Manhattan .....	37	73
Fredrick H. Schultis.....	Sylvan Grove .....	37	92

**Freshmen**

Fulton G. Ackerman.....	Lincoln .....	35	78
John S. Boyer.....	El Dorado .....	37	76
Clarence B. Cunningham.....	Manhattan .....	37	53
Ronald T. Curtis.....	St. John .....	34	54½
Tom D. Dicken.....	Winfield .....	29	63½
Clarence L. Gish.....	Abilene .....	34	57
John B. Hanna.....	Clay Center .....	37	65½
George B. Oberle.....	Carbondale .....	35	79
Paul Regier.....	Moundridge .....	36	60½
Alva M. Schlehuber.....	Durham .....	37	60
Bruce R. Taylor.....	Alma .....	37	74
Carl Williams .....	Dodge City .....	37	51½

**DAIRY CATTLE JUDGING TEAM PLACE  
IN UPPER HALF**

In the intercollegiate contest in the judging of dairy cattle held at the Waterloo Dairy Cattle Congress, Waterloo, Iowa, Monday, October 1, 1928, the K. S. A. C. team placed fifth among eleven competing teams. The team was composed of

Merle G. Mundhenke.....	Lewis
Fredrick H. Schultis.....	Sylvan Grove
J. Frederick True.....	Perry

J. Frederick True was seventh high individual in the entire contest. Ray L. Remsberg was alternate at the contest. Prof. H. W. Cave, coach, accompanied the team.

Less than two weeks after the Waterloo contest, or on Saturday, October 13, the same trio of K. S. A. C. judges entered the intercollegiate contest at the National Dairy Exposition, Memphis, Tenn. Twenty-seven teams were entered in this contest and the Kansas team placed eleventh. In the judging of Jerseys they placed third and in the judging of Holsteins, sixth.

**DAIRY PRODUCTS TEAM PLACE FOURTH**

In the intercollegiate contest in the judging of dairy products held at the National Dairy Exposition, Memphis, Tenn., Monday, October 15, 1928, the K. S. A. C. team placed fourth among 15 competing teams. The team placed second in judging cheese, sixth in milk, seventh in butter, and twelfth in ice cream. The personnel of the team was as follows:

Terrell W. Kirton.....	Amber, Okla.
Theodore R. Freeman....	West Plains, Mo.
Ray M. Mannen.....	Lincoln, Kan.
Terrell W. Kirton	was second high indi-

vidual and Theodore R. Freeman fourth high individual in the judging of cheese. Prof. W. H. Martin, coach, was unable to accompany the team to Memphis and Mr. H. J. Brooks, instructor in the dairy department, accompanied them.

K. P. Nickoloff, '28, of Razgrad, Bulgaria, spent the past summer on the Fort Hays branch of the Agricultural Experiment Station and registered in K. S. A. C. for graduate work this fall. It was soon determined, however, that he was so unfortunate as to contract a light case of tuberculosis. Arrangements were promptly made to send him to the state sanitarium at Norton for a year, the necessary expenses (approximately \$600) to be borne by popular subscription. Over \$100 has already been contributed and the Cosmopolitan Club are to present a benefit program Friday evening, November 16, at the college auditorium. If this program does not realize the necessary amount the activities of the committee in charge will be continued until the necessary funds have been contributed.

Mr. Nickoloff is improving nicely and it is to be hoped that the opinion of the attending physicians, that he will recover within a year, will be verified as time goes on.

W. L. Martin, '22, must be a busy man. During the school year he teaches mathematics and physics in the Winfield high school. The summer months he spends on his orchard north of Arkansas City. In addition to overseeing the orchard during the past summer, he was successful in raising 100 turkeys under confinement. This was the first time turkey production under this method had been attempted in his region.

C. F. Bayles, '27, has been appointed county agricultural agent of Dakota county, Nebr. His address is South Sioux City, Nebr. He writes to the Department of Horticulture that the agriculture and the farmers of his county are both fine to work with and that he enjoys his work very much.

H. B. Hinds, M. S., '26, is doing extension work in Arizona.

# What About These New Cooking Compounds?

C. O. Jacobson, '28

Several so-called cooking compounds are to be found on the market at the present time which are being sold in direct competition with butter and oleomargarine, but enjoy the privilege of not being taxed nor supervised. These products, which are made largely from cocoanut oil and include some peanut oil, are at the present time manufactured in six different states and sold in at least twenty.

In practically every way these products imitate butter. They are artificially colored, salted, contain moisture, and are even being wrapped and packed in quarter-pound "butter-like" cartons. They are being sold as butter by some unscrupulous dealers and are served as butter in some of the cheaper restaurants.

Oleomargarine products are taxed one-quarter of a cent a pound when sold in the uncolored form and 10 cents a pound if artificially colored. Furthermore, oleomargarine must be manufactured in bonded and inspected plants and sold only by licensed dealers, whereas these cooking compounds are not regulated in any such manner.

The present oleomargarine law provides two tests to determine whether a product shall be taxed as "oleo," (1) "The product shall be in imitation or semblance of butter" and (2) "The product shall be so made, calculated, or intended to be sold as and for butter." The courts observe a rule that "imitation or semblance of butter" means that the oils must be mixed or churned in milk or cream. The products sold as cooking compounds avoid this law because they are churned in brine or water, and may have a synthetic butter flavor added to them during manufacture.

In order to meet this situation which these cooking compounds have advanced, Senator Norbeck of South Dakota and Senator McNary of Oregon have proposed an amendment to the present oleomargarine law which reads as follows: "Any product churned, emulsified, or mixed in cream, milk, water, or other liquid, and containing moisture in excess of one per centum shall be classified as oleo-

margarine and shall be taxed accordingly. This proposed amendment is before the senate committee on agriculture and forestry at the present time.

The dairy industry and even the oleomargarine people (with the exception of those companies making the cooking compounds) are endeavoring to get this amendment enacted and thus place these cooking compounds under government supervision. The manufacturers making these cooking compounds declare vigorously that they are not selling a substitute for butter, but rather that they are selling a shortening to be used in cooking where the housewife would like to use butter but feels that she cannot afford it. The United States department of agriculture rules that lard and lard compounds shall contain not more than 1 per cent of moisture, whereas these cooking compounds contain 12 per cent or more.

In addition to this claim just discussed the manufacturers of these cooking compounds justify the manufacture of such compounds by saying that at the present time the packing concerns are making a naturally tinted oleomargarine by combining a yellow cottonseed oil and the yellow internal fat of old dairy cows. This product is taxed only one-fourth of a cent a pound, because the courts have ruled that it is not artificially colored.

The packers control all of this yellow fat from which the tinted "oleo" is made and, therefore, the "cooking compound" people feel that they have a legal right to manufacture a yellow product which in every way imitates and resembles the tinted "oleo," which in turn imitates butter. What they are really doing is producing a substitute for butter and are underselling oleomargarine because their product is neither taxed nor supervised.

How long the government will allow such an industry to flourish unrestricted cannot be definitely foreseen, but undoubtedly in the near future these cooking compounds will be classed as butter substitutes and taxed and supervised as oleomargarine.

# ALUMNI NOTES

M. E. Goff, '23, is farming on Route 8, Manhattan.

R. B. Keys, '17, Boyle, Kan., is engaged in general farming.

H. A. Ames, '23, is writing the grain trade news for the Kansas City Star. His position is that of reporter on the financial news desk.

B. H. Luebke, M. S., '26, has recently accepted a position as instructor in the Department of History of Wesleyan college, Gooding, Idaho.

F. I. Reynolds, '17, is in charge of the Pet milk condensery at Mulvane, Kan. He is also general manager of the Pet milk plants at Iola, Kan., and Odessa, Mo.

E. R. Ausemus, '23, is assistant agronomist in the cereal office of the United States Department of Agriculture located at the Northern Great Plains Field Station, Mandan, N. Dak.

W. H. Atzenweiler, '26, is a county agricultural agent in Brown county. His 4-H Club boys' judging team won the state-wide judging contest at the Kansas State Fair at Hutchinson this fall and will represent Kansas at the coming International Live Stock Exposition, Chicago, December 1 to 8, 1928.

Mr. Atzenweiler was high-point man on the Kansas live stock judging team that placed fourth among 12 competing teams at the American Royal on November 14, 1925. He ranked sixth in the entire contest, making 891 out of a possible 1,000 points. He is a capable judge of live stock and a county agricultural agent who is not afraid to roll up his sleeves and lead his patrons in things worth while.

Kenney L. Ford, '24, will take up his duties as secretary of the Alumni association of K. S. A. C., November 1, 1928. Mr. Ford is a hard worker and a leader. During his senior year in college he was editor of The Kansas Agricultural Student. Since graduation, as teacher of vocational agriculture in

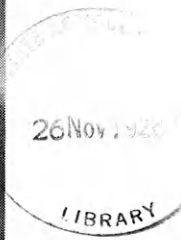


KENNEY L. FORD

the Norton Community high school, he has made an outstanding record.

E. L. Westover, '11, until recently specialist with the American Guernsey Cattle Club has organized a company to sell Guernsey milk in Portland, Ore.

George J. Raleigh, '22, (Ph. D. University of Chicago) is in the employ of the research department of Swift and Company. Mr. Raleigh was married during the past summer and is at home at 5731 Kenwood ave., Chicago, Ill.



# My Impression of Florida Agriculture

C. R. Enlow, '20

For anyone from Kansas or any of the states of the Middle West, a first impression of Florida is rather astonishing, particularly if he has not made a study of the state in advance. All expectations are wrong to some extent, some for better and some for worse. Personally, I felt slightly disappointed at first, but after having my preconceived ideas of the state righted, each day my enthusiasm grows.

It is necessary, before attempting to give my impressions of Florida agriculture, to give a few statistics concerning the state. Florida is a huge sandbar, an extension of the coastal plain of the Atlantic and Gulf coasts, and therefore is primarily sand. Of the 35,000,000 acres in the state, more than 10,500,000 consist of "flatwoods"—flat sandy land covered with pine timber, which is the basis of the turpentine industry.

This land is also used to some extent for grazing, but on account of the annual burning which is done to remove the underbrush and thereby facilitate the industry by making access to the trees much easier and lessen fire danger to turpentine crop, it is practically impossible to get good grasses sodded down. It is claimed another reason for the burning is to get better and earlier grazing from the grasses that are native to this land, but as these grasses have a very low nutritive value except where young and are undoubtedly injured by the burning and also by the loss of much needed organic matter, it would seem a serious effort should be made to clear brush by other means and attempt to start some of the proved grasses which would eventually sod over this area. Burning likewise injures and frequently destroys the young pine trees.

More than 3,500,000 acres consist of "hammock" or hardwood land. This is also sandy land but is underlaid with limestone or a residual, limestone clay soil. In the virgin timber these hammock areas can be distinguished by the hardwoods which grow on them, mainly several species of oaks. The trees are large and vigorous if it is a true hammock soil, and must not be confused with

the scrub hardwood which is sometimes found on flatwoods or a gradation from flatwoods to hammock, and which was sold by unscrupulous real estate men during the boom as "young hammock." The hammock areas are adapted primarily to citrus.

Nearly 7,000,000 acres of Florida consists of rivers, lakes, and low land which is not tillable. The lakes are everywhere, and are beautiful, clearwater lakes abounding with innumerable species of fish. Bass fishing in Florida has all the excitement of trout fishing in the mountain streams of the West.

Four million acres of muck and peat land, mainly in the vicinity of Lake Okeechobee, are to be found in Florida. Practically the entire Everglade territory has muck and peat soil. This area has barely been touched. Some truck crops are being raised near the lake on the "custard apple" soil, which is so named because a tree by that name grows abundantly on it, and must be grubbed out before farming is possible. This land is slightly higher in elevation (and also in price) than the land farther back from the lake which is called "saw grass" land. The saw grass, which is really a sedge, grows in profusion on this poorly drained land. When this land is broken, the *Amaranthus* (the common Kansas pigweed) grows like trees. It is not uncommon to see them with stalks eight to twelve inches in diameter. The big problem with this land is water control, and many millions have already been spent in the construction of several large canals to both coasts. It is also very important that the water table be not lowered too much, as the soil oxidizes very rapidly when aerated and also it increases the cost of irrigation, which is not an uncommon practice among the truck growers.

In regard to the agricultural practices, I am very much impressed with the results obtained by the use of commercial fertilizers. It is customary here to fertilize all truck and fruit crops, supplying nitrogen, phosphorus, and potassium generally as commercial fertilizers. On the muck soils, practically all crops respond to phosphate and potash ap-

plications, and the response to copper sulphate on muck is astonishing. Thirty to forty pounds of copper sulphate per acre has not only prevented the death of many crops but has stimulated a wonderful growth. At the Belle Glade Agricultural Experiment Station, practically all crops treated with this salt have made more than twice the growth of the same crops not treated.

Manure is not used to any extent as a fertilizer, mainly because it is so scarce. It is necessary, of course, to use manure and green manure crops in order to improve the soil, but owing to the scarcity of live stock, manure is almost out of the question except in localities where the dairy industry is important. When the tick eradication work is completed, which will be in four or five years, more and better live stock will undoubtedly be brought into the state.

Green manures, both summer and winter legumes, are grown to some extent, and are grown more each year. Crotalaria, beggarweed, cowpeas, velvet beans, and soybeans are grown as summer legumes, and the vetches and Austrian winter peas are used to a limited extent as winter legumes. Pigeon peas show considerable promise as a summer legume but have been tested only two years. They make wonderful growth on sandy land.

On the sandier types of soil, plant material decays very quickly, and the nitrogen is soon lost by leaching. This makes it necessary to make soil building a continuous process, and many farmers prefer to use commercial fertilizers altogether. Crotalaria is an excellent green manure crop, and is grown extensively in tung oil and citrus groves, scattering its own seed in the late fall and coming up in the spring. Many citrus growers are interested in winter legumes in order that they may have legumes in their groves throughout the year, though winter cover crops are not common in citrus groves.

From the standpoint of machinery, cheap labor is the substitute. Much of the field work is done by hand, as the negroes are numerous and are essential to the cotton industry throughout the South. While Florida is not considered as a cotton state, negro labor is used practically altogether in the fruit and truck crops as well as the field

crops, consequently there is ~~is a~~ the demand for labor-saving machinery found in the wheat belt. The negroes are more law abiding and receive much more humane treatment than the negroes in the North.

Fruits and vegetables comprise the chief crops. Oranges, grapefruit, satsumas, and tangerines are the principal crops. Pineapples, avacados, mangos, and bananas are grown in limited quantities. Apples and cherries are not grown at all, and few peach trees are to be seen. Celery, lettuce, peppers, eggplant, tomatoes, cabbage, watermelons, potatoes, cucumbers, beans, peas—in fact almost any of the truck crops can be grown here. Of the total United States production in 1926, Florida produced 52 per cent of the eggplant, 22 per cent of the celery, 38 per cent of the peppers, 16 per cent of the watermelons, 14 per cent of the table tomatoes, 22 per cent of the snap beans used fresh for table use, and in the fruit line, 87 per cent of the grapefruit. These products go on the market at a time of year when the demand is great and a high price is the rule rather than the exception.

Corn and cotton are the principal field crops. Peanuts are also an important crop. The semi-flint to hard dent varieties of corn are grown generally as they resist weevil much better than the starchy types, and also make better "grits," a food of which Floridians are very fond. The corn is grown in rows from four to six feet apart, and frequently peanuts, velvet beans, or cowpeas are grown in the middles. Early-maturing, short-staple varieties of cotton are grown. At one time Florida grew fine sea-island cotton, but the arrival of the boll weevil made it necessary to grow other varieties. Both corn and cotton are grown principally in northern and western Florida. This portion of the state is where field crops are grown generally, while central and southern Florida might be called the fruit and truck belt. Western Florida refers to the part of the state adjoining Georgia and Alabama, while the western part of the peninsula is spoken of as the "West Coast."

Sugar cane is grown by the farmers of northern and western Florida as a cash crop. Each farmer has his own mill, and produces



approximately 150 gallons of cane syrup per acre, which is sold directly to the consumers or used at home. The mosaic disease of sugar cane has cut down the acreage considerably, but recently increased plantings have been made with resistant varieties. Cayana No. 10 is a popular resistant variety.

An industry which appears very promising in its infancy is the tung oil industry. Tung oil, which is used in the manufacture of paint and varnish, is obtained from China, but it has been discovered recently that the tung oil trees are well adapted to the sandy soils of central and northern Florida. Extensive plantings, principally near Gainesville, have been made, and many leading paint and varnish concerns are financially interested in the enterprise.

As a general rule, most of the seed supply of the truck crops comes from outside the state. One interesting exception to this occurs in Jefferson county where a large per cent of the watermelon seed sold in the country is grown.

Very few of the northern grasses are found growing abundantly in Florida, that is, grasses that are economically important. Bermuda grass abounds everywhere, and Carpet, Bahia, Centipede, St. Augustine, and Dallis are also important grasses. Except for relatively short periods during the winter months, some of the grasses are green throughout the year, but would furnish very little pasture during January and February. An interesting practice is the seeding of such grasses as Italian Rye and Redtop on Bermuda lawns in the fall, in order to have green lawns during winter. These "winter grasses" die out in the early summer as the temperature rises and the Bermuda becomes vigorous. In southern Florida and in many places on the coast, Bermuda and other grasses remain green throughout the winter.

The rainfall is rather uniform over Florida, and is close to 50 inches per year. The months of heaviest rainfall are June, July, August, and September. The storms are generally local showers, and even during the rainy season the sun usually shines at least part of each day. Fort Myers recently celebrated 200 consecutive days of sunshine.

It is dangerous to talk about temperatures.

As someone has said, the thermometers belonging to the Florida chamber of commerce only record temperatures between 40 and 80 degrees, consequently it might be better simply to say that the summer temperatures are much lower than those of Kansas, but the air contains much more moisture. The nights are always cool, and "Florida has never lost a citizen from sunstroke." Winter temperatures are very pleasant.

In summing up this article, I must say that I have been in Florida but a short while and Florida is a large place. It is farther from Key West to Pensacola by rail than it is from Jacksonville, Florida, to Chicago. Therefore it is easy to see that general statements concerning the agriculture of the state are hard to make. But it certainly does appear that Florida has wonderful possibilities in nearly all agricultural lines, and now that the boom is over more capital and energy will be devoted to these lines. Farming here is an altogether different proposition than in the North, and anyone from the North is under a considerable handicap, at least until he begins to understand the problems here.

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Paul G. Lamerson, '27, completed the professional requirements for the state certificate for the teaching of vocational agriculture the second semester 1927-28. He is now teaching vocational agriculture in the Spearville Rural high school.

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W. W. Fetrow, '20, (Ph. D., University of Wisconsin, '24) has accepted a position as cotton marketing specialist with the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C. He was formerly a member of the faculty of Oklahoma A. & M. college, Stillwater.

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J. Kenneth Muse, '24, has charge of the dairy work in the Panhandle Agricultural and Mechanical College located at Goodwell, Okla. In writing to the Student asking that his address be changed he reports that he and Mrs. Muse spent a pleasant vacation last summer at points of interest in the West, especially in Tucson, Ariz. They plan to visit Manhattan before the football season closes.

# FARM NOTES

## COMMERCIAL ORCHARDING IN LEAVENWORTH COUNTY

F. O. Kincaid of Atchison, Leavenworth county, is the manager for a firm that leases over 200 acres of bearing orchard. Last year, under his supervision, these orchards yielded about 80,000 bushels of apples, of which over 100 cars were shipped out of the county. Mr. Kincaid followed very closely the spray schedules given out by the Kansas Agricultural Experiment Station and produced over 90 per cent clean fruit last year. Next year he intends to use one of the largest sprayers in the Missouri valley. This sprayer, having an output of 40 gallons a minute, operates under a pressure of 300 pounds. The pump will be run by a Ford engine and spray rig will be pulled by a Fordson tractor.

Before moving to Atchison, Mr. Kincaid had charge of the Hunt Brothers orchard at Wathena, where he made an outstanding success. He is a consistent booster for K. S. A. C. and is always willing to assist with any demonstration work along horticultural lines that the Division of College Extension wishes to have carried on.

—L. W. K., '29.

## MR. FRANK JOHNSON OF MARSHALL COUNTY LETS THE KIDS KEEP THE FAMILY

Supplying his townspeople with kids has grown from a hobby to a practical business for Frank Johnson of Irving, Marshall county. The foundation for this business was laid five years ago when Mr. Johnson bought a pure-bred Toggenburg goat to provide milk for his children. The next spring he had four goats. The kids made the best of playmates for the children and his surplus animals were soon given away.

The demand for kids created an interest in the milk. Soon Mr. Johnson was supplying a few of his neighbors with goat's milk. The old goat consistently yielded four quarts of milk a day and thrived on the pasturage

the back lot afforded. Pasture was supplemented with a small amount of grain in the winter.

That fall three grade Toggenburg does and a pure-bred buck were added to the herd. Nine kids made their appearance in the spring so the pasture was increased to one acre to care for the increasing herd. A shed replaced the old chicken coop which had housed the original goat.

The milk from this herd averaged more than 12 quarts daily and was readily disposed of. The business has grown to such proportions that during the past season nearly 100 quarts of milk have been sold daily. In addition, the demand for foundation stock is taking the surplus kids. It is not unusual for kids from "four-quart" does to be contracted for even before they are born, by people who wish to raise their milk supply in their own back yard.

—A. B. K., '29.

## LINN COUNTY FEEDER PROVES PROFITS CAN BE MADE IF A MAJORITY OF THE FEED IS PURCHASED

Cowan Bearly, a native of Linn county, is one of the leading farmers and successful cattle feeders of that section. He feeds well-bred cattle of good quality. This kind always proves its extra worth.

Last fall Mr. Bearly purchased more than 50 head of high-grade Angus steers and heifers at the American Royal feeder sale. These cattle were purchased at 11 cents per pound, which appeared rather high at that time, but later when the gain and selling price had been considered no criticism could be made of the cost.

Rough, inexpensive feed was fed to these cattle for a short time, later being replaced by alfalfa, cottonseed meal, and corn. This ration was gradually increased until they were on full feed. Full feeding continued until the middle of June, at which time the steers

were fat and prime. Their quality and high degree of finish were responsible for the \$14.50 per hundredweight which Mr. Bearly received for them. The heifers brought slightly less per hundred as they were not so fat as the steers. The wide margin received between cost and selling price plus the gains produced resulted in a good profit for the owner.

A significant part of Mr. Bearly's feeding operations is the fact that he purchased all of the feed except the alfalfa, which was home-grown. The purchase of the corn and cottonseed meal was made at a season of the year when prices on these feeds were reasonable. This factor of feed purchase plays an important part in the success of a cattle-feeding enterprise. —M. L. C., '30.

#### A NEW SPIRAL PLOW ELIMINATES SIDE DRAFT

Each state fair usually brings out some new inventions of interest to farmers. This year at Hutchinson a new plow, called a spiral plow, made its appearance and attracted much favorable attention. From a distance this plow resembles a large disc plow similar to the popular one-way plow. Closer inspection shows that instead of a series of sharp discs mounted on a shaft there is just one continuous sharp blade in a spiral around the main shaft. It operates in the position of an auger rolled along the ground.

One advantage claimed by the inventor of this plow is that all side draft is eliminated. The light smooth-faced supporting wheels support this claim. This absence of side draft makes a big saving in power required to pull the plow. Another advantage claimed is that a better job of cutting off roots and turning under weeds is accomplished by the spiral where there is no open space as in the regular disc plow.

While space on the fair grounds did not permit a demonstration, photographs of the machine in operation bore out the claims of the inventor.

This plow is not yet on the market, but it will probably sell for about the same price of other tractor plows.

—H. D. G., '29.

#### SOUTHWESTERN KANSAS FARMERS FIND PICK-UP GUARDS VALUABLE IN 1928 WHEAT HARVEST

"How am I going to get the wheat off the ground?" was the question asked by nearly every wheat farmer in southwestern Kansas this summer. Favorable growing conditions last spring caused most of the wheat to attain the height of 3 ½ feet or better. Conditions seemed favorable for ripening for a few weeks, and then came the rain.

The wheat ripened slowly due to the cloudy weather and excessive moisture. Then came high winds, hail, and more rain. The long straw was unable to hold the heavy heads with the result that the straw was bent or broken with the heads turned down, a large number of them on the ground.

Pick-up guards for harvesting machinery, principally the combine, began to make their appearance at hardware stores, implement dealers, and blacksmith shops. At first, they were taken with reluctance by farmers and the expression was generally heard, "I'll try them anyway." After a few favorable days for harvest, farmers found that by the use of the guards they could get a large per cent of the fallen heads. Then there was a rush to every implement dealer and hardware store for them, while blacksmith shops spent most of their time trying to supply the demand.

The device, in most cases, is very simple. A rod is fastened to a guard on the sickle bar and extends from 1 ½ to 2 feet in front of the bar. Another rod, somewhat smaller, is fastened to the outer end of the first rod and turns backward and upward so that it will just go under the reel. These extensions are fastened on the sickle guards in sufficient numbers to pick up the fallen wheat.

There were many newspaper stories during the harvest season telling how some farmers were obtaining yields of 35 to 50 bushels to the acre from fields that had been given total losses by insurance companies. Anyone having worked in the harvest the past season in this section is inclined to doubt these stories. However, this device undoubtedly was a great help and saving to the wheat farmers in this section. Many farmers say that they will not remove these guards even for the average season.

—R. F. B., '29.

# The Effect of the Digestive Processes of Animals on the Viability of Corn and Sorghum Smut Spores

C. H. Ficke, M. S., '27

It is generally taken for granted that the chief method of dissemination of corn smut is through barnyard manure. It is assumed that the spores (analogous to seeds of flowering plants) pass through the digestive tract of animals uninjured and germinate sooner or later in soil or manure. The black spores of corn smut, unlike those of sorghum smut, germinate in the soil at any time during the warm season, and the sporidia (reproductive bodies) produced are carried by the wind and other agents to the corn plants where they may infect the young tender tissues.

Corn smut, due to the conspicuous and peculiar development of smut boils, has excited suspicion that it would be harmful if eaten by animals. The cause of the so-called corn-stalk disease of cattle has not infrequently been charged to corn smut. In view of the lack of definite information, contradictory conclusions in literature, and erroneous ideas, it seemed highly desirable to make a thorough study of the effect of the digestive processes of cattle and horses, on the viability of corn and sorghum smut spores, and to make observations as to the effect of feeding smut upon the animals.

The studies consisted, in brief, of feeding corn and sorghum smut to cattle and horses, followed by testing the spores for viability after passing through the digestive tract. These experiments were conducted over a period of two years, with a number of different animals each year. The experiments were conducted during the winter and the smut fed was from the crop of the preceding summer. The smut was usually fed mixed with the grain ration.

Corn smut (in the powdered form) was fed during the course of the experiments. Eight cows received 30.5 pounds of smut, an average of 3.8 pounds per animal. Eight horses consumed 43 pounds, an average of 5.4 pounds per animal. These animals were fed

smut for periods varying in length from two to eleven days.

In a separate experiment the covered kernel smut of sorghum was fed to both cows and horses. Some of these animals were the same ones to which corn smut had been fed. Thirteen cows were fed a total of 19.68 pounds of screened smut and 712 smutted heads, an average of 1.5 pounds of ground smut and 54.8 smutted heads per cow. Four horses received a total of 11.92 pounds of powdered smut and 749 smutted heads, an average of 2.98 pounds of screened smut and 187.2 smutted heads per animal. The number of days these animals received smut varied from four to seven.

During these studies it was found that the corn and sorghum smut spores, with a few exceptions, lose their viability in passing through the digestive tract of either cattle or horses. Two hundred twelve samples of corn smut and one hundred eighty-eight samples of sorghum smut, which were recovered from the excretions or digestive tracts of animals, were tested for viability. The contents from different parts of the alimentary canal of several horses to which smut had been fed were examined in order to learn in what part of the digestive tract smut spores lose their germinating power. It was found that for the most part the spores lose their viability in passing through the stomach. The nonviable condition of smut spores is no doubt largely brought about by the acid juices of the stomach.

In these experiments the health of the animals to which corn and sorghum smuts were fed did not seem to be impaired. Their appetites remained normal and there were no evidences of physiological disorder. At the beginning some animals showed a decided preference for smut but at the end of a few days they preferred other food although they

(Continued on page 32)

# Raising the Dairy Heifer

Theodore R. Freeman, '29

No greater problem confronts the dairyman today than that of securing a sufficient number of good cows to replenish his herd. They cannot be so easily obtained as they could a few years ago because of the higher prices and greater demand for pure-bred cows. If this need is supplied, more dairy-bred heifers must be raised and the logical place to raise them is on the dairy farms.

It is best, from the standpoint of the calf, as well as for other reasons, to have the calf dropped during the fall. Fly and heat annoyance, with attendant disorders, are thus avoided, and the calf is in condition to make the best possible use of pasture the following spring.

The calf should be taken from its dam when three or four days old and placed in a dry, clean, well-ventilated stall, but one that is free from drafts. It will do better in a cool, dry, well-ventilated stable than in a warm, poorly-ventilated, or moist stable.

In order to develop the best dairy cows, it is essential that there be uninterrupted growth from the birth of the animal until she freshens. This means that the best possible methods of care and feeding must be employed, paying attention to details as well as to points of major importance.

A calf weighing 50 pounds at birth should have six pounds of milk a day; and a 100-pound calf, ten pounds. It is better to underfeed at the start than to overfeed. It usually pays to feed whole milk until the end of the second week, when skimmilk may be substituted for part of the whole milk. By the end of the fourth week the whole milk may be entirely replaced by skimmilk. Until the calf is in vigorous and thrifty condition, no attempt should be made to change to separated milk. After this change has been made, the amount of skimmilk fed may be increased to 15 to 18 pounds per day. It is usually not economical to feed more than this unless milk is very plentiful.

A normal, vigorous calf will begin picking at its bedding when two to three weeks old, and at this time grain and roughage of the best quality should be provided. Early cut

timothy is sometimes preferred to clover or alfalfa, since the latter roughages are rather laxative and tend to produce scours. The hay should be kept before the calves in a rack unless clover or alfalfa is fed, when it may be necessary to limit the amount of roughage the calves receive.

The grain is best fed after feeding the milk. This will help prevent the calves from sucking each other after being fed. A very satisfactory grain mixture consists of three parts cracked corn and one part bran. The calf should be eating about a half-pound a day by the time it is a month old. From then on the quantity of grain fed may be gradually increased, giving the calf all it will take until three pounds a day is reached.

When a heifer calf is to be raised in the herd as a dairy cow, it should receive milk or a good substitute until six months of age. If skimmilk is plentiful and cheap it may even be fed to advantage until the heifer is eight to ten months old, although the feeding of skimmilk and calf-meal gruel is usually discontinued at the age of six months.

When the calf reaches this age it is capable of eating sufficient hay and grain to continue unchecked in its growth when milk is eliminated from the ration. The change should be made gradually so as not to upset the animal's digestion or check growth.

If the calf is weaned during pasture season, no other roughage need be provided. However, grain feeding to supplement the pasture should be continued some time after milk feeding is stopped. A good grain mixture to feed the heifers on pasture would be two parts by weight each of ground corn and ground oats and one part by weight each of wheat bran and linseed oil meal. A safe rule to follow is to feed one pound of grain for the first hundredweight of the heifer, and one-half pound for each additional hundredweight until three pounds is being fed.

Calves weaned in the fall should have the same consideration with regard to grain as those weaned on pasture, but roughage should be fed up to the limit the animal will

(Continued on page 32)



# Removal of Spray Residues

L. W. Koehler, '29

It has been announced by the Food, Drug, and Insecticide Administration of the United States Department of Agriculture that beginning with the 1928 crop, all fruit offered on domestic markets and entering interstate trade must conform to the British regulation which states that all fruit marketed in that country must not have more than 0.01 of a grain of arsenic trioxide ( $\text{As}_2\text{O}_3$ ) per pound of fruit. The tolerance in the United States for 1927 was 0.025 of a grain per pound. But this year the domestic and British tolerance is the same and is known as the International Tolerance.

This regulation will require the removal of part of the spray residue on fruit grown in many parts of the United States, before the fruit can find its way into interstate or international trade, since much of the fruit now grown carries more than this maximum allowance of arsenic.

The problem of spray removal is especially severe in parts of the Pacific Northwest, Colorado, the Ozark Mountain district of Arkansas and Missouri, Kansas, New Jersey, Maryland, portions of the Virginias, and Pennsylvania. In these regions the apples must be sprayed so late in the season that the amount of arsenic is nearly always over the Federal tolerance limit. So the problem of the removal of spray residue is one that confronts the Kansas fruit grower as well as the growers of many other parts of the country.

Two general methods of removing spray residue have been developed: one, by wiping and brushing; the other by cleansing the fruit with some solvent. In some sections, where only one or two lead arsenate cover sprays are used, the fruit can be cleansed sufficiently well to meet the world tolerance by the dry or wiping method. If, however, three or more cover sprays have been applied, some washing method is almost invariably necessary if the fruit is to meet the world tolerance limit consistently.

The types of dry cleaners now in use include the rotating brush wiper, the vibrating brush wiper, and cloth and rag wipers of various kinds. On the average these machines

remove from 15 to 35 per cent of the spray residue on apples or pears. They also polish the fruit and greatly improve its appearance. Though these dry cleaners remove some of the wax from apples, shriveling of fruit due to wiping has not been significant under commercial conditions.

The washing method, when properly applied, results in no serious injury to the fruit and also adds to its appearance. Some fruit has been washed with weak alkaline solutions, as one of sodium hydroxide. However, alkaline solutions have a tendency to attack the natural wax of the fruit, causing a portion of the fruit so treated to shrivel in storage. Alkalies also, if not thoroughly washed off, tend to cause some discoloration of the fruit.

The most common method of removing the spray residue to below the standard of 0.01 of a grain per pound of fruit, is the hydrochloric acid washing method. This method has no serious effect on the fruit and usually adds to its appearance. As yet, no washing compound thus far tested has been proved equal to a weak solution of hydrochloric acid. This acid is fairly cheap; can be obtained in large quantities; and as it is a non-oxidizing substance it causes no discoloration of punctures or discolorations in the stem or cavity of the fruit. When used at temperatures below 90 degrees F. this acid does not readily attack the wax, or protective covering, of the fruit. It is a volatile compound and so, if the rinsing has not been thoroughly done, there is no danger that the acid will be on the fruit when it reaches the consumer.

There are several types of acid washers on the market at the present time. In some the apples are floated through the tank containing the acid solution of one to two gallons of hydrochloric acid per hundred gallons of water. In others the apples are conveyed by a belt or roller through an inclosed chamber where the acid solution is sprayed on the fruit from all sides. The fruit is then conveyed to the next compartment of the washer where the acid is removed from the treated

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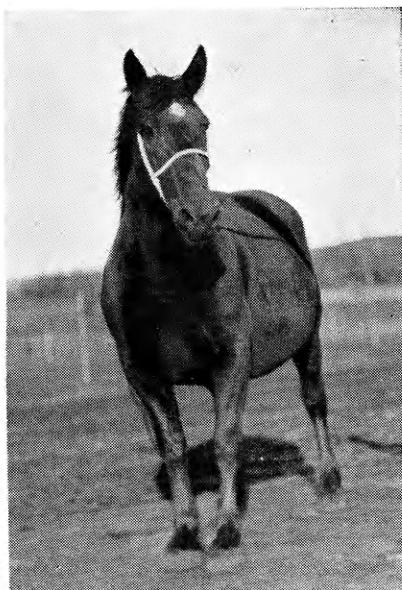
# Percherons at K. S. A. C.

C. W. McCampbell

Head of the Department of Animal Husbandry

The Kansas State Agricultural College maintains a select bunch of Percheron mares for instructional purposes. The college has been building up this stud on a quality rather than a quantity basis.

One of the most interesting members of this stud is the mare, V. Laura, foaled April



V. LAURA

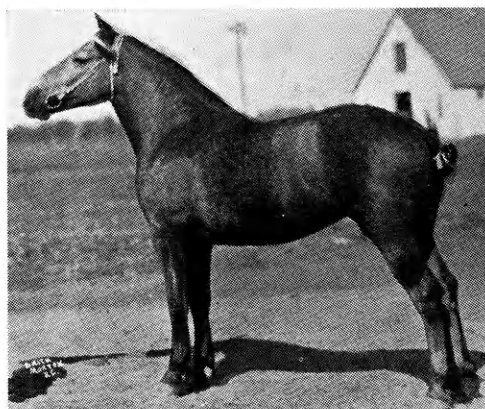
A pure-bred mare of the K. S. A. C. Percheron stud, noted for the champion caliber of her progeny.

2, 1915, sired by Jungo, a son of Carnot and out of a daughter of Rosa Bonheur. This mare was bred by Mr. Tom Singmaster and was purchased from him as a weanling. She foaled her first colt in 1919 and has foaled a colt each year since that date, this year's foal making her tenth. Her 1927 and 1928 foals have not been shown. All others have been shown and each has been an outstanding prize winner at the Kansas State Fair.

Alline, a daughter of V. Laura, foaled in 1921, is another splendid member of the college Percheron stud. She is a fine type and

is proving herself to be a great breeder. She was Grand Champion mare at the Kansas State Fair in 1922 and second in the open class for yearlings at the American Royal the same year.

Another good mare is Carnalline out of Alline, mentioned above, and by Carnot. This good young mare, foaled in 1924, was Junior Champion at the American Royal in 1926. This year she is suckling a great line-



ALLINE—GRAND CHAMPION, KANSAS STATE FAIR, 1922

Alline is a splendid type of Percheron mare. She is the daughter of V. Laura.

bred foal by Cromwell Egot by Egotest by Carnot.

For several years K. S. A. C. has had an arrangement with E. L. Humbert & Son of Corning, Iowa, that has been very advantageous in the matter of securing a herd sire. The college has been picking a thin horse in the early winter and feeding and fattening him for the next year's shows, in the meantime using him as a herd sire. In the late fall of 1924 it selected the thin colt, Black Joe, by Colonel Olbert, a grandson of Olbert. This horse was shown to second place at both the American Royal and International shows the next year, 1925. The college now has



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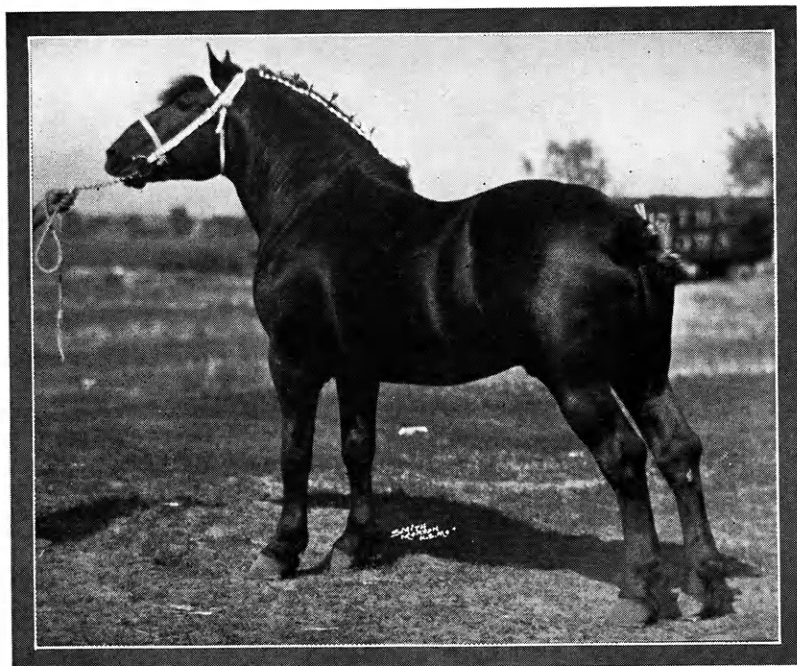
Dealer's Name.....

some very promising two-year-olds by this good horse.

In the fall of 1925 K. S. A. C. picked the thin colt, Cromwell Egot, fed and fitted him for the shows of 1926. He, too, won second both at the American Royal and the International. He was so well liked by the college that Mr. Humbert was persuaded to allow the college to carry him over another

son of Egotest—this time a yearling. He is in many ways the best horse the college has yet used. He is big and drafty with a lot of quality and moves like a hackney.

The college follows the practice of showing on alternate years and in the main only yearlings and weanlings. This plan enables the institution to show a new string, always its own breeding, each time it exhibits.



CROMWELL EGOT—GRAND CHAMPION, AMERICAN ROYAL, 1927

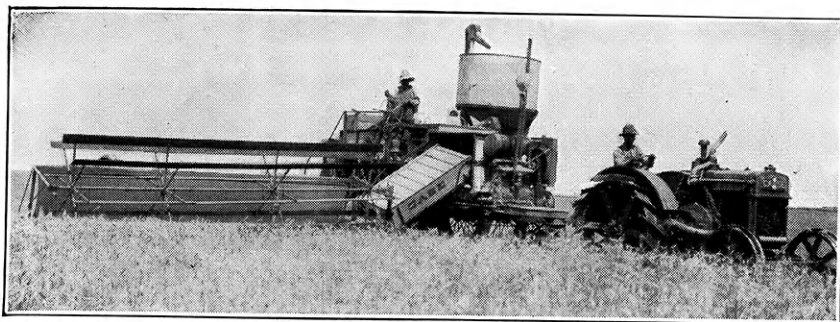
year and in 1927 he was an outstanding Grand Champion at the American Royal. His great sturdiness and clean-cut conformation elicited a statement from the judge that "he is a regular Rock of Gibraltar." He contracted a severe case of influenza on the way to Chicago and although he showed as a very sick horse that had no business in a show ring, the judges placed him third. During the week of the International he found a new home in Colorado at a long price. The college has the best bunch of weanlings and yearlings by Cromwell Egot it has ever raised.

Last year K. S. A. C. selected another thin

Inquiries at K. S. A. C. indicate a growing demand for good horses at advancing prices.

Harold N. Cary, f. s., is farming near Keats. He is establishing a reputation as a breeder of Duroc Jerseys. Mr. Carey was a student in K. S. A. C. the second semester of 1922-23 and during the college years, 1923 to 1925.

H. S. Baird, '11, one of the visitors at homecoming, October 20, owns and operates the Liberty Dairy Company, Santa Barbara, Calif. Mr. Baird took in homecoming on his way home from the Dairy Industries Show held in Cleveland, Ohio.



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# The Kansas State Farm Bureau

J. R. Wells, '28

In 1918 there were 48 separate and independent county farm bureaus in Kansas. It became evident among the leaders that if this movement was to give its members the greatest advantage there must be some central organization, so all county farm bureaus could work toward a definite goal and receive recognition from other organizations and industries.

On November 21-23, 1918, a conference of farm bureau officers and county commissioners was called by Dean H. Umberger, of the Division of College Extension of Kansas State Agricultural College, for the purpose of considering matters of importance to the farm bureaus of Kansas. At this meeting resolutions were passed to strengthen the farm bureaus in each county, to increase membership by developing a strong program of work, and to raise sufficient funds for carrying out the work planned.

A state-wide committee was appointed at this conference to investigate, to gather information, and to lay plans for the organization of a State Farm Bureau Association. This organization was to become effective when accepted by a majority of the county farm bureaus in the state. The members of this committee were F. O. Peterson, Morris county; D. M. Lauver, Miami county; and H. M. Holderman, Meade county. The committee met at Topeka, February 20, 1919, and Mr. Ralph Snyder and Dean H. Umberger were present by invitation. This committee studied the constitution of other state organizations. They then formulated a constitution to be recommended at a meeting of the farm bureau representatives to be called during the fall of 1919.

According to this plan a conference of farm bureau delegates was called for October 21, 1919, at Manhattan, for the purpose of considering the report of this committee. At this conference 38 counties were represented.

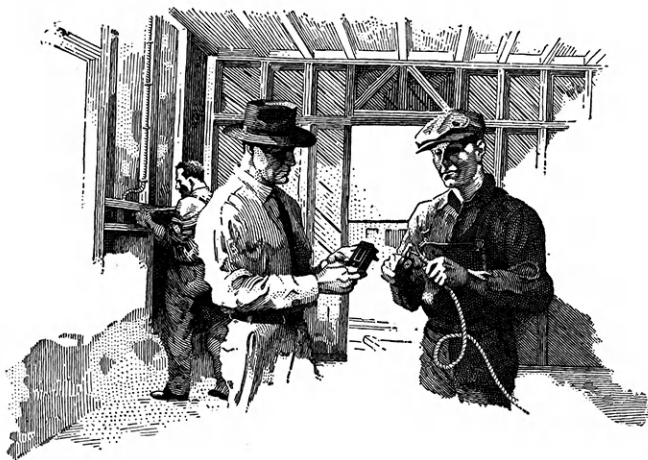
The constitution was presented and adopted. The organization was to be known as the Kansas State Farm Bureau. Each county farm bureau in the state cooperating with

K. S. A. C. and the United States Department of Agriculture was eligible for membership and was to be represented by one delegate elected by the Farm Bureau Board at its regular meeting. Such a delegate must be a bona fide farmer and be provided with proper credentials. The annual dues to the Kansas State Farm Bureau were \$1 for each member in the county farm bureau.

The officers of this organization consisted of a president, vice-president, and treasurer elected by ballot by the majority of delegates at the annual meeting. The executive committee consisted of the elective officers and one delegate from each congressional district. This committee was to appoint a secretary for the organization.

Each county was asked to advance \$100 to the state association which amount was to be deducted from membership dues. The state organization made intensive membership drives in the counties and by February 1, 1920, enough of the counties had ratified the movement to make the adoption of the constitution and the formation of the Kansas State Farm Bureau permanent. Ralph Snyder was elected president, J. M. Ryan, vice-president, and P. W. Enns, treasurer.

As soon as the organization was perfected it was called upon for help. The wool in 40 counties had been gathered together in 33 wool pools. The wool had been lined up on two sales circuits and preparations made to sell it. Commission houses which had agreed to send buyers sent word 12 hours before the sales were to have taken place and announced that all offers announced by them were cancelled. Their reason for this was cancellation of orders by merchants for eastern woolen mills. They claimed the price had dropped from 70 cents per pound to 35 cents. The Kansas State Farm Bureau was asked to take charge of selling this wool. The wool was shipped to Chicago and stored in cooperative warehouses to be held for higher prices. There had not been the slump in market for wool claimed by some of the commission houses. By holding until fall as the commission houses had previously done they



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# GENERAL ELECTRIC

sold direct to eastern mills. Credit was received through federal reserve banks for farmers needing the money invested in the stored wool.

Cars to move wheat were more easily secured by organized effort on the part of the state farm bureaus as this put the farmers more nearly on equal terms with other industries and the Interstate Commerce Commission better appreciated the situation of the wheat growers.

The organization is constantly defending the interests of the farmers. Some of the problems before it now are: Freight rates, transportation, inland waterways, tax justice, wheat pools, cooperative marketing, public education, and social standards of farm people. The needs and interests of the farmers are being impressed on other industries and on legislative and congressional bodies by various organizations, one of the most important being the State Farm Bureau Association.

#### REMOVAL OF SPRAY RESIDUES

(Continued from page 25)

apples by a thorough rinsing with clear water. From the rinsing compartment the fruit goes to the warm air dryer where all adhering water is evaporated from the surface of the fruit.

Washers range in capacity from 400 to 2,500 bushels a day, so they are adapted to the needs of both the individual grower and of the community packing house.

#### VIABILITY OF SMUT SPORES

(Continued from page 23)

continued to eat smut without apparent injury. It should be pointed out that all animals ate many times more smut in these experiments than they would be able to obtain in either grain or forage rations under ordinary conditions.

These studies show that the feeding of smutted material to animals, if it is consumed by them, is not a factor in perpetuating and spreading either corn or sorghum smut in the field. The writer believes from the experimental data obtained that corn smut and kernel smut of sorghum do not cause any noticeable injury to horses or cattle when eaten by

them in combination with food. These conclusions seem justified since the experiments were conducted during two seasons, with several different animals, and since more smut was consumed in most instances than the animals would find under natural conditions.

#### RAISING THE DAIRY HEIFER

(Continued from page 24)

consume. If good legume hay is available it should by all means be used as part of the roughage, otherwise there is likely to result a lime deficiency in the ration. When legumes are available, the linseed meal may be omitted from the grain ration.

Heifers from one to two years old need the same feed and about the same care as heifers six to twelve months old. They will consume more feed, however, than the younger heifers, and should receive all the hay they will clean up. It is also a good plan to feed 15 to 25 pounds of silage per day, and one-third pound grain for each 100 pounds of live weight. Heifers that are bred to calve at two years should receive additional grain daily, ranging from two to five pounds, during the three months before calving. The grain feeding should be liberal enough to have the heifers in good flesh at parturition.

The age at which the heifers should be bred varies among the different breeds and with the development of the individual animal. The Jerseys and Guernseys become sexually mature at an earlier age than do the Ayrshires and Holsteins. As a rule, Jerseys and Guernseys should be bred so they will freshen for the first time when about 24 to 26 months of age. Ayrshires should come into milk when about 26 to 28 months old, and Holsteins when about 30 months. If the individual is well grown and has a tendency to lay on fat she should be bred at an earlier age than one not so well grown and showing less tendency toward fat formation. The aim should be to put the young animals off the boarder list and onto the working list at as early an age as their physical development will permit without doing permanent harm.

Gladwin A. Reed, '25, poultry service man with the Pioneer Hatchery, Petaluma, Calif., was married July 14, 1928, to Miss Hettie A. Beagles, of Santa Rosa, Calif.



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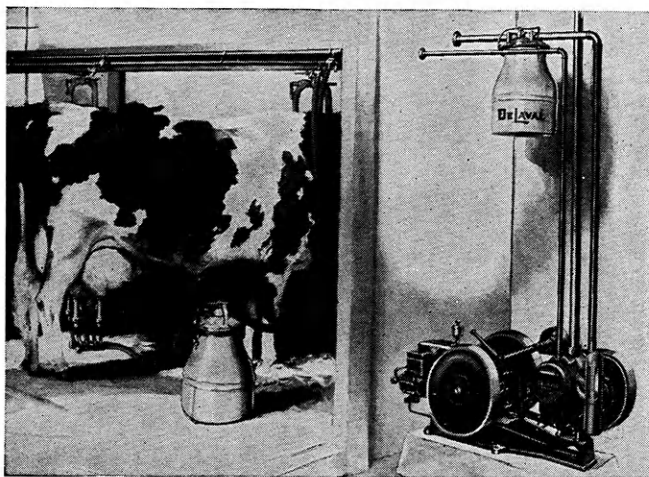
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