

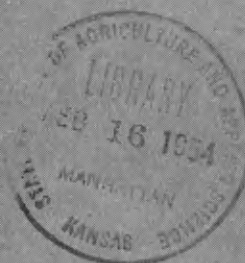
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FEBRUARY 1954

Kansas State college of Agriculture

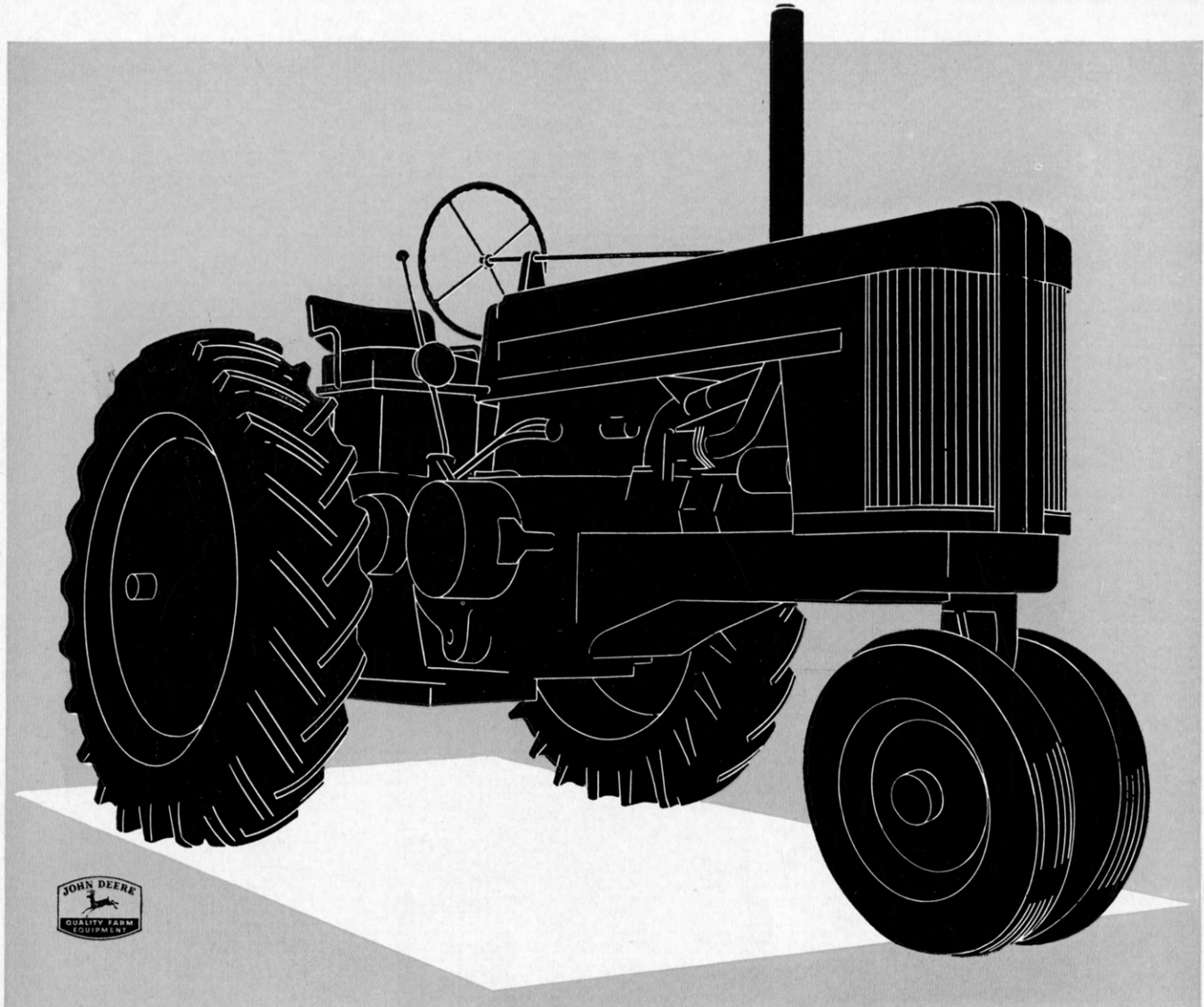
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A Floral Valentine... see page 9

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Manhattan, Kansas

THE KANSAS *Agricultural Student*

Vol. XXX

February 1954

No. 3

Editorial...

We hope you enjoy this valentine cover from the staff as much as we did in composing it.

The March issue will feature Hospitality Week for the Home Economics School along with the regular news of the Ag School. Dan Henley, a senior in Ag Journalism, will be the new editor.

Since this is my last issue as editor, I'd like to put it on record that I've enjoyed every minute of it. Even though the Ag Mag has been plenty hard work, it gives a guy a real satisfaction when the mag comes off the press.

I learned magazine production fast. I hope I did a creditable job. Even though I might stay around and learn a little more perhaps, I believe it is better not to retrace my steps. I feel it's time some other Aggie gets a crack at the Ag Mag.

As is the custom, I'll give the new editor any advice he wants. Good luck to the Ag Mag!

Herb Lee

ON THE COVER

HOW'S THIS for a valentine, Aggies? The girl your heart may be yearning for is Miss Millicent Schultz, a sophomore in Home Economics from Pawnee Rock and a member of Clovia sorority. Don't let the formal attire fool you, she's a real little farm girl and likes dairy cows much better than flowers. Millie gladly posed for this "Be My Valentine" shot in the flower garden setting to illustrate that carnations will make an excellent floral valentine for your girl come February 14.

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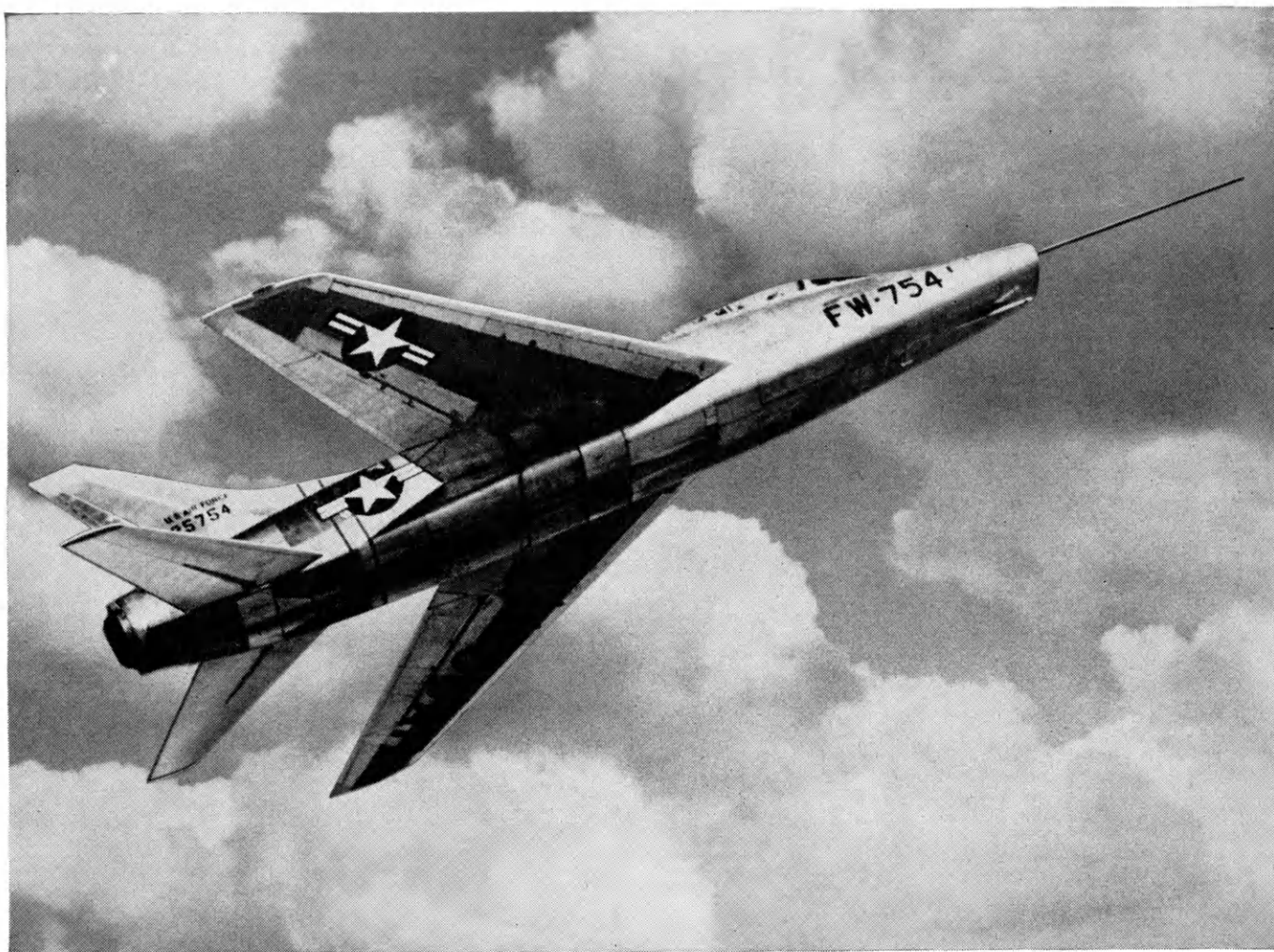
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Chit Chat

By Clyde W. Mullen, Assistant Dean

A Collegian editorial concerning the indifference of students toward College Assembly gives this column an opportunity to relate a favorite cliché of Dan Casement, now deceased.

Said Old Dan, the citizenry of this country faces the hazard of falling to the level of "mass mediocrity."

Should Attend Assemblies

College training is intended to lift those fortunate persons who can strive to attain a fragment of advanced education to a level a notch or two above the level of "mass mediocrity." However, right here on this campus, less than half of our students are sufficiently motivated toward a higher education to take advantage of the opportunity to hear these outstanding speakers who are

brought to the campus to appear before our Assembly audiences.

It seems almost reasonable to charge that many college students are willing to settle for "mass mediocrity." This group who, some of us think might well be interested in seeing and hearing and learning from these scholars, is willing to sleep, or lounge during Assembly programs.

Some of us can remember when attendance at College Assembly was required. No good. Lead a horse to water, but how the heck you going to make him drink?

"Mass mediocrity," it must be a sort of comfortable, even contagious, laziness; a Nirvana, a loss of the flame of desire.

Another squib in the same issue of the Collegian ended with these lines:

Dad: Then the degree doesn't mean much, does it, son?

Son: No, sir, I guess it doesn't.

Wake Up, Girls!

During the summer, we picked up the following formula for dressing down the girls in the office:

"You girls better wake up. You haven't been on the ball lately, and you are doing as poorly as any time since you have been in the office. You have shown nothing since you came back from your vacations. Apparently you have been reading the civil service rules and believe you can't be fired. You may find out differently. Recently your letters have been humiliating to me. I hate to send them out. The work of the best typist in the office has been disappointing. Remember you don't own this job. Speed doesn't do any good when you are making mistakes. You'd better wake up pretty quick or we'll have to lose some of you around here!"

Wouldn't that be terrible? It is an adaptation of Casey Stengel's lecture to his Yankees, after they had lost three straight games to the Chisox. Ball players really have to take it, don't they?



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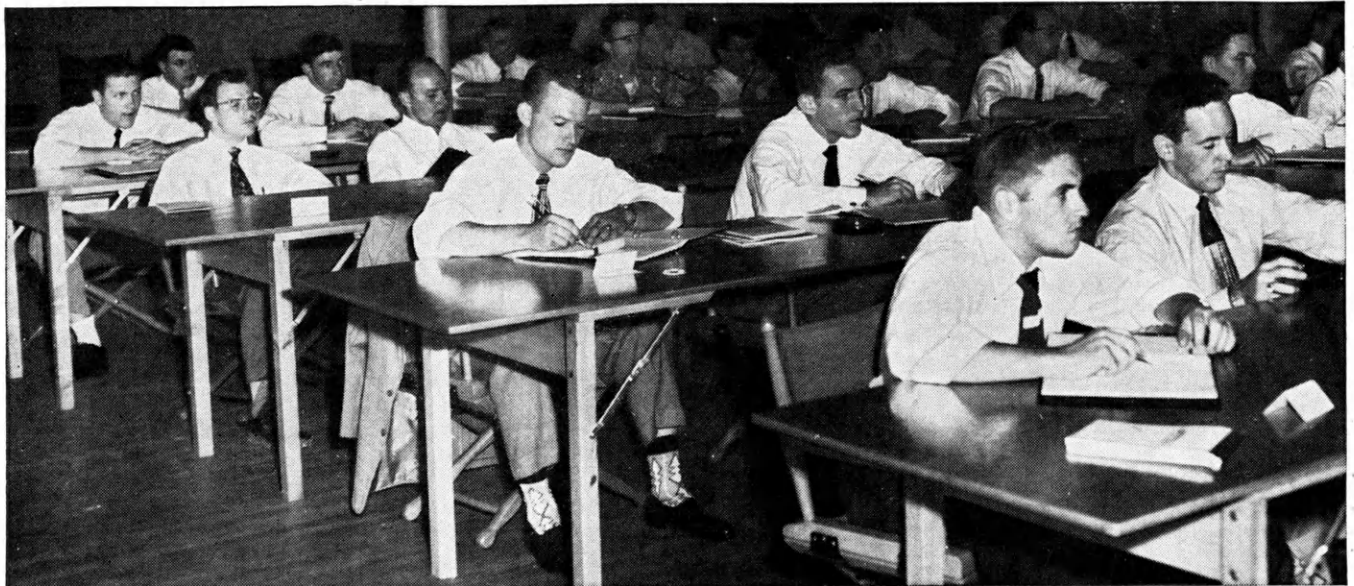
**Farm Bureau Mutual and Kansas Farm Life
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Great is the PROMISE to Trained Farm Youth



Throughout the ages, a great and lasting faith has led men on. The Shepherds were led by faith in a star. Faith in a belief that the world was round brought Columbus to our shores. And faith that there were new and better things beyond led hardy pioneers to cross the sea, to live and fight for what they thought. But with faith must come understanding, too, to live and learn from those about you—to hear and see the things they've done—to read, and strive to sift the good from bad, and save the best for future use. For you who study well and learn to do, there's opportunity—and with faith and understanding of what must be done, there's promise in the land.



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CASE

Ag School Angles

THE AGGIES are tops with the gals. Anyway that's the way it seems to be with an Aggie being crowned Favorite Man on Campus at the Snowball dance. FMOC Bob Cullins, a sophomore in Agronomy from Overland Park, was chosen by the vote of girls attending the dance.

One of the finalists for FMOC was also an Aggie, Dee Follis, a junior in Animal Husbandry from Hoxie.

Can Lay Two Eggs

A hen at the poultry farm may lay two eggs at the same time. The hen has two vents which makes this feat possible. To date the hen has laid only one egg at a time.

Aggies, grab your March issue of the Ag Student early. Hospitality Week for the Department of Home Economics will be featured. Girls writing the stories and girls' pictures

in the magazine should make the next issue revealing, to say the least. Should be real interesting.

Feed Conference on TV

K-State animal nutritionists enjoyed a good audience at their formula feed conference recently. But an even greater throng is expected to see them in action over 150 television stations. A newsreel of the activities was prepared with the help of two TV cameras.

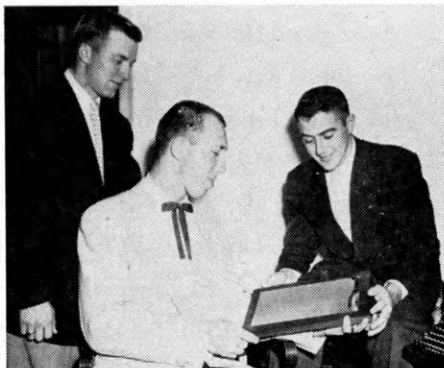


Photo by Leon Stanton

DISPLAYING THE AWARD for the best ag magazine cover in the nation are Chuck Bellman, business manager; Dick Steffens, photographer; and Herb Lee, editor.

Raises Family in Midwest

When an instructor turns down \$12,500 to stay at K-State there is no doubt that he must like it here.

Dean Emeritus R. I. Throckmorton was offered over that sum and his choice of four big cities in which to live and work. But he refused the offer, giving the reason, "The Midwest is the best place to raise a family." He was then receiving \$3,400 as an instructor in Agronomy.

Place at Chicago

Other than poultry placing fourth at the International Livestock Exposition in Chicago meats was 15th, livestock 20th, and crops 8th.

The bird judges made a clean sweep of market poultry products with Richard Reinhardt taking first, Mark

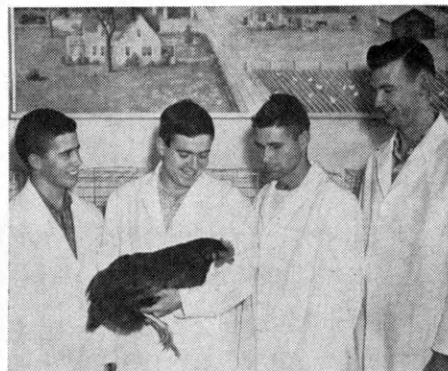


Photo by Bob Ecklund

THE POULTRY TEAM which won fourth among 22 teams at Chicago. Left to right, Mark Drake, John Brethour, Howard Stitt, and Richard Reinhardt. Tom Avery is coach.

Drake second, and John Brethour third. Reinhardt was 18th in the contest and Brethour 14th.

On the meats team Bob Sayre was high man in lamb judging. Other team members: Walt Schoen, Don Slade, and Richard Bohart. Coach was Ralph Soule.

In livestock judging Harold Reed placed sixth in the contest, winning first in sheep and cattle. Other team members were Bob Oltjen, Dan Pherigo, Max Teeter, Charles Thomas, Milton Wendland, and coach Don Good.

The crops team placed fifth at the Kansas City show on their way to Chicago. Jim Smith placed sixth at both places. Other judges were Garmon Breitenbach, Wayne David, Leonard Pacha, and coach Ernest Mader.

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The Floral Valentine

for Your Girl

Carnations

By Herb Lee

SWEETHEART'S delight they are, carnations for that favorite girl on Valentine's Day. The Aggie who sends a corsage of this fragrant flower will be making time fast. There's no better way to say, "Be My Valentine."

Florists stock up on carnations long before Valentine's Day to handle the trade that will be wanting to please "the little woman." Actually, the carnation is becoming more and more popular as a flower for all occasions. In fact, it is second to roses in sales as a cut flower, according to William Carpenter, assistant professor in Floriculture at K-State.

Carnations in Big Demand

Once thought of only as a funeral flower because of its fragrance, favorable publicity has educated the public differently. Carnations are now in big demand. Their soft clove fragrance and gentle beauty make young men look sharp with a boutonniere for Mother's day, and girls are stunning with a corsage or a carnation placed in their curls for that special occasion. Carnations, too, are used to decorate tables and churches, and for other big events.

As for another talking point, carnations are cheaper and will last just as long as roses. They come in every color of the rainbow and a host of other shades and mixed colors. Red is most wanted for Valentine's Day while white and pink follow in popularity.

Carnations have a history as old as the Bible. About 300 B.C. that wise



THE RED AND PINK carnations Miss Schultz is holding are the most popular colors for your sweetheart on Valentine's Day. She is this month's Ag Mag cover girl.

Greek, Theophrastus, described them as the "Divine Flower" with the fragrance of the clove tree. In those days carnations grew wild from southern Europe to India. They were tiny flowers, many to a plant and blooming only in the spring.

It was in 1840 that a French gardener obtained a carnation which has since been termed "perpetual-flowering." Generally regarded as the



Photos by Dick Steffens

DISBUDDING CARNATIONS to one flower to each stalk is Bob Layton, a senior in Floriculture. Good yields are 10 flowers.

"American carnation," it has been brought to a high degree of perfection in greenhouses by American growers.

Expensive Valentine

"Why are carnations so high?" the fellow who buys some may wonder. Because they take valuable greenhouse space and are a specialized crop and difficult to raise. It costs \$2 per square foot of bench space to operate a greenhouse.

There are a number of steps to raising carnations. At Kansas State cuttings are taken from full grown carnations in January and March. They are placed in beds of vermiculite, a mica substance that absorbs much water. Small pipe nozzles constantly spray water on the bed to keep

(Continued on page 22)

CARNATIONS ARE PROPAGATED from cuttings from grown plants and placed in mica beds such as this one at Kansas State.



Prof. F. W. Bell

Dean of Judging Coaches

By Elaine Olson

WELL KNOWN is Prof. F. W. Bell, among Kansas stockmen, Kansas State Animal Husbandry students, Future Farmers of America, and 4-H youths.

Most FFA and 4-H'ers first see Bell in person when they judge at state fairs. And once they get to know this soft spoken fellow whose second sense is cattle judging, they will never forget him.

Judged Scores of Cattle

Bell has judged scores of cattle and taught an even greater number of students to judge in his Animal Husbandry classes. He was coach of the K-State junior and senior judging teams from 1919-1944.

However, Bell has not always been a promoter of beef cattle. He was born in New York state in the farming region known as the Mohawk Valley where the main enterprise is dairying. While attending Cornell University, he realized that someday the farming tactics in his region would have to change. The farm land would become worn out and would not produce adequately for the farmers to make a living. His answer to this problem was to turn to the production of meat animals.

After graduation Bell went to Ohio State College for graduate work in Animal Husbandry and then planned to return home and put his idea into effect.

Was Adventurous

But as fate would have it, Bell accepted an offer from Texas A & M. "Like most young people, I had the desire to get away from home," he said. "It was an opportunity to learn more about raising meat animals."

He never got back to the Mohawk Valley to take over his father's farm

for in the fall of 1918 Kansas State added Bell to the faculty. Since that time Manhattan has been his home. In 1919 he took over the job of coach-

GRADING PAPERS of his Animal Husbandry class is Prof. F. W. Bell, the Dean of livestock judges and judging team coaches.

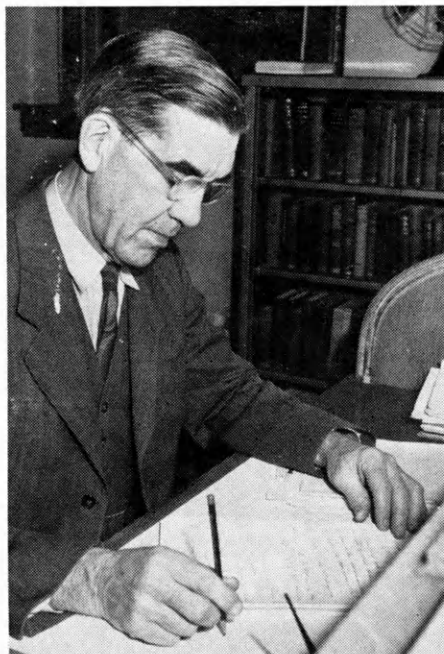


Photo by Dick Steffens

ing the junior and senior judging teams and held this position for 25 years.

During this time Kansas State had the first place team at the Chicago International in 1923, 1936, 1937, and 1938. K-State had the highest ranking of any team in the United States while Bell was coach. It is one of two schools in the nation to have permanent possession of the "Bronze Bull," the traveling trophy awarded to the top judging team at the International. The bull, which has to be won three times for permanent pos-

session, was won by Bell's 1938 team. K-State is the only team ever to win the International three years in a row.

Of all teams Bell directed none have placed lower than eleventh with an average of 30 teams competing each year. For the period between 1919 and 1944 they walked off with four firsts, five seconds, four thirds, two fourths, and four fifths.

Professor Bell had two systems for picking team members during his coaching career. His first was to select outstanding boys during their freshman and sophomore years and work with them through their junior and senior years. However, he did not feel that enough students were getting the experience that they should have under that system, so early in the 1920s he developed a new system.

Gave All a Chance

It aimed at producing more men with judging experience. He felt that if the boys received more instruction during their pre-college days they would have a better chance after they came to college. More individual attention was given to each boy instead of concentrating only on the outstanding students. In this way Vocational Agriculture teachers and county agents left K-State with more know-how in judging. Furthermore some boys, who would otherwise have never been noticed, developed with the added instruction.

It is especially interesting to Professor Bell to note what has happened to former members of his judging teams.

Dr. Arthur D. Weber is now dean of the Ag School; Roy Freeland, secretary of the state board of agriculture; Tom Potter, president of the

(Continued on page 21)



Photo by Dick Steffens

VETS AND FARMERS work together in doctoring up this animal. One billion dollars is lost annually by neglecting livestock.

OUR OLD BOSSIE cow looks sick, pa. Think we ought to call the vet?" the farmer's wife said. "Oh let her alone; she'll be all right," the old farmer answered.

But bossie died that night just as thousands of farm animals do each year due to negligence on the part of farmers.

There is an estimated billion dollar loss caused by diseases, parasites, pests resulting in death, and decreased growth and gains, explains Dr. M. J. Twiehaus, professor of Veterinary Medicine at K-State. Lack of co-operation between farmers and veterinarians is responsible for a large part of this loss, Dr. Twiehaus, a practicing vet for four years, points out.

Don't Wait Too Long

Evidence of this shows up when a vet is seldom called until the animal is almost dead when little, if anything, can be done. There is also a lack of organization, of time, and consideration for the vets by the farmers.

Instead of burying that billion dollars, it should be producing for farmers. Here's good advice: Get acquainted and co-operate with your

Vets and Farmers Co-operate to

Cut Cattle Losses

By Nancy Brecheisen

veterinarian. Don't wait until you are in desperate need. Many animals can be saved and he can help solve many of your problems.

For instance, suppose at calving time many of the calves are born dead. If the vet could have examined the cows earlier, he probably would have found that they were infected with trichomoniasis, vibriosis, or brucellosis (Bang's disease). Among range cattle a lack of vitamin A is a common cause of abortions.

Examine Frequently

By routine pregnancy examinations a farmer can be sure that his cows are bred. Otherwise, he may discover three or four months before calving time that a cow or two is not bred and be feeding them a year for nothing.

One cow infected with mastitis can cause high bacteria count in the milk from a whole herd. A dairy operator especially is hit hard because he cannot sell his milk. If a thorough check shows that his barns, equipment, and methods are not at fault, then a veterinarian must find the diseased cows.

If sows and litters have been confined on concrete or wooden floors away from the ground for several weeks, they may be suffering from nutritional anemia (lack of iron). Sudden losses among apparently healthy litters may be due to this deficiency. Pigs affected with nutritional anemia sometimes die following vaccination or in shipment because of the strain on their hearts.

Ask Vet's Advice

When buying pigs, a stockman may unknowingly bring hog cholera or atrophic rhinitis into his herd. Atrophic rhinitis causes deformities of the snout for which no cure has

yet been found. The vet probably can tip the farmer off about diseased herds.

Some years shipping fever is more rampant than others. Before buying new stock, ask the vet about it. If it is prevalent and you still want to buy, take extra precautions. Prophylactic treatment usually pays good dividends.

If a farmer is in the market for breeding stock, maybe the vet can recall where he saw some purebred Hampshire ewes for sale, or a grade Poland China boar, or a registered Guernsey heifer. As well as warning where not to go, he can suggest where to go for new stock.

Of course, you can't eliminate all calls by preventive measures. But when you do call your vet, you can help make his time as short as possible.

Help Vet Treat Animals

Two big aids are to have the animal or animals already confined when he arrives and have help for him. You save him valuable time and possibly some cash for yourself because you don't give him the chance to charge for unnecessary time. Your veterinarian appreciates warm water, soap, and towel when he finishes a job, too. In this way you are also helping to prevent the spread of the disease from your animals to those of the next farmer.

When it's time to vaccinate, castrate, or test, make arrangements with your vet two or three days ahead of time. He'll try to keep that day open for you. After testing stock he'll need a couple of days to get the reports back.

Try to line up vet jobs during his less busy seasons. For instance, test

(Continued on page 24)

Feed Hogs Milo

By Dan Henley

THE WHEAT acreage in western Kansas is down this year due to restrictions set by the government. But farmers in that part of the state must still raise some crop on their land. One of the most desirable substitutes will be milo.

With the prospect of a large supply of milo grain on the market next fall, it might be profitable for the hog raisers of the state to plan on including some sorghum in their feeding program.

Prof. C. E. Aubel, swine specialist in the Animal Husbandry department at K-State, anticipates farmers will want more information on feeding milo to hogs. He is conducting a

feeding trial, results of which will answer many questions for hog raisers.

Four Test Lots

He is feeding four lots of 10 pigs each. These fall farrowed pigs averaged 52 pounds at the start of the experiment and will be fed to 225 pounds. One lot is receiving shelled corn; another, whole milo grain; the third lot, ground milo; and the fourth is being fed ground milo plus the antibiotic, aureomycin. All lots are receiving a good protein supplement mixture and all hogs are self-fed.

Aubel can supply a lot of information about sorghums now, however,

since he has been running sorghum feeding experiments for a number of years. This year's experiments are to supply up-to-date records and to further prove, by repetition, the results of previous tests.

Aubel said milo in many cases is almost equal to corn in feed value and is just as cheap to feed, especially when there is a large supply on hand, which usually reduces the price. Feeding tests in the past have shown whole milo of various varieties to be at least 90 percent as good as corn for hog feed; and by grinding, the feeding efficiency of some varieties has run as high as 99 percent that of corn.

Most grain sorghums run a little lower in digestible nutrients than does good yellow hybrid corn, but certain varieties are higher in protein (see analysis table). Aubel said these data show milo probably would not produce exactly the same good results as corn pound for pound, but the difference is very slight.

Gains Might Be Equal

Even though milo isn't quite so good as corn chemically, if the hogs would eat more of it, they might make the same gains in equal or less time. Palatability of the small, ground grains, therefore becomes an important consideration. Most sorghum varieties used in feeding tests were consumed in larger amounts than corn, especially if they were ground. Animal nutritionists have found also that the ground grain is more easily digested and better utilized by all types of livestock.

ECONOMISTS PREDICT that similar scenes will be common in Kansas wheat areas this spring. A large milo grain crop would mean lower prices, thus cheaper feed.



Courtesy Ag Experiment Station



Large or small, hogs make cheap, fast gains on sorghums supplemented with legume pasture in summer or alfalfa hay in winter.

Stressing the importance of grinding milo to prevent whole grain from passing through the hog undigested, Aubel cited the results of a test he completed recently. Hogs fed a ration of ground milo, supplemented by tankage and alfalfa pasture, made an average daily gain of 1.56 pounds and required 350 pounds of milo for 100 pounds of gain. Another lot, fed the same ration except that whole milo was used, gained only 1.43

more fine material than is made by grinding.

Several tests have been made in the past at K-State—the last in 1951—on the palatability of various sorghum varieties. Each test has included the most popular common varieties and many variety crosses still in the experimental stage. Westland milo (according to the pigs) was the most desirable grain in the last experiment. It was followed by the varieties

milo, and less protein supplement was consumed by the hogs eating Westland grain.

Must Feed Protein

In all sorghum feeding trials, a protein supplement has been included in the rations for the pigs regardless of the variety of milo fed and whether it was whole or ground. Aubel emphasized it is essential to feed a good supplement. In fact, he said, with some sorghum varieties, more supplement may be needed than with corn. Tankage, along with alfalfa hay, both self-fed, will make up the nutrient deficiencies resulting from the low protein-high carbohydrate content of both sorghums and corn.

Hogs gain best when they can get their milo from self-feeders, Aubel says. He has used them in all sorghum feeding trials. Self-feeders are convenient, time-saving, and are safe since hogs won't overeat sorghums any more than they will corn.

Gives Maximum Price

Dr. Leonard Schruben and R. E. Clifton of the K-State Department of Agricultural Economics have compiled a feed grain substitution scale which indicates the maximum price a farmer should pay for various grains according to their feed value when substituting them for corn. A positive prediction of the market value of sorghum or corn throughout the season cannot be made, of course,

(Continued on page 26)

Grain Analysis Table

Grain	Carbohydrates	Fat	Protein	Crude Fiber
Corn	9.88	73.22	4.24	1.95
Westland Milo	9.06	65.40	2.93	1.97
Martin Milo	9.88	74.33	3.24	1.64
Midland Milo	10.63	74.65	3.18	1.45
Colby Milo	14.25	69.92	2.90	2.44

pounds a day and ate 383 pounds of grain for each 100 pounds gain. As is usually the case, the hogs requiring the least grain ate slightly more tankage.

Cracked Milo Best

An adverse effect can be produced by grinding the milo too fine, however. A 3/32-inch screen in a hammer mill was used on most of the grain in Aubel's experiments. This screen produced a medium grind which he usually refers to as cracked grain. He said rolling of dry milo grain had been tried but with little success. The grains explode when they pass between the rolls, producing

Gurno, Midland-Wonder Club cross, Midland, and Martin, in that order.

Dr. Aubel noted in this experiment that the top five varieties were of the non-waxy-endosperm type, and the remaining four less desirable varieties had waxy endosperms. The waxy, he said, has a rather flat taste; the non-waxy, a stronger flavor.

Westland milo has shown up well in most of the feeding trials at the College. Hogs gained 7 to 10 percent faster on that variety than on corn. In some tests Midland milo has equaled Westland for rate of gain. Westland, however, proved to be more efficient and economical in producing 100 pounds of pork than did either Midland, Martin, or Colby

Can Fruit Survive In Kansas?

By Abdul Kamal

KANSAS is well known as a wheat state and yet, despite drouth, freezing temperatures, insects and diseases, some of the finest fruits in the United States are grown in the Sunflower state.

Apples, peaches, and grapes, when correctly handled, cannot be surpassed in quality. As early as 1876 the Centennial Exposition in Philadelphia awarded the Kansas entry, an exhibit of 96 varieties of apples, a medal inscribed, "For an exceedingly fine exhibit of apples esteemed the more value from the general absence of merely local showy and worthless sorts." Kansas grown grapes won heavily among the fruit entries at the World's Fair in Chicago in 1893.

Fruits Net \$2 Million

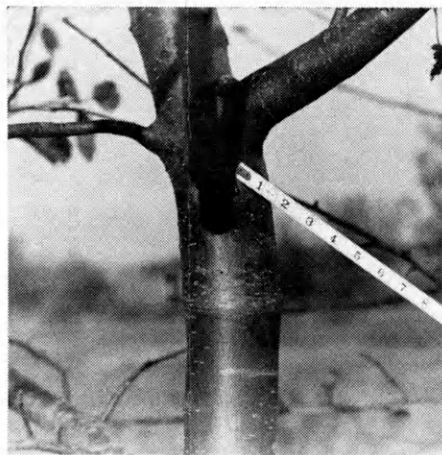
In 1920 there were over four million fruit trees grown in Kansas and in 1950 this number had more than doubled. The annual income of fruits in 1950 in Kansas was \$2 million.

Probably the greatest hazards to fruit growing in Kansas are low winter temperatures, drouth, insects and diseases.

Research Reduces Gamble

According to Ronald W. Campbell, associate professor in Horticulture, "Fruit growers cannot control weather. However," he added, "due to research carried on at the College Experimental station, much of the gamble with the elements has been reduced."

Still fresh in the minds of many is the unpredicted freeze of November 11, 1940. Professor Campbell explained that conditions were favorable for continued growth in the fall of that year as considerable rainfall and not even a light frost had been received until that fateful Armistice Day. Without warning the tempera-



FRUIT SCIENTISTS are finding methods to prevent winter injury with hardy stocks after experiencing a severe freeze in 1940.

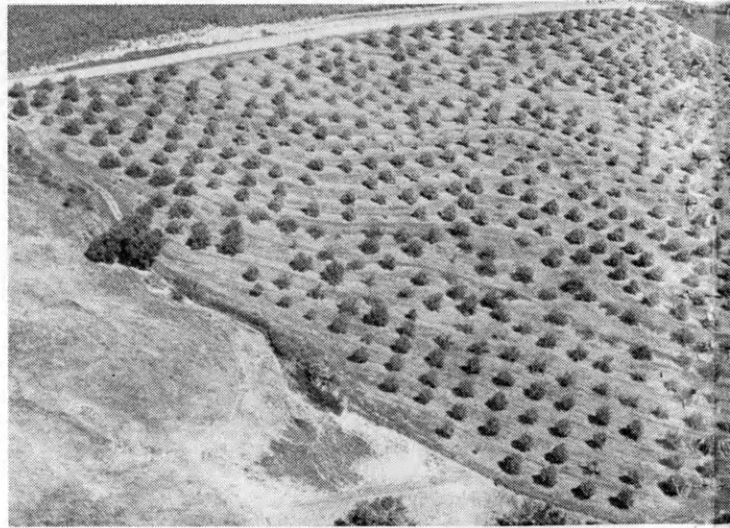
ture dropped to around 0° and remained low for three days.

Since the trees were not hardened or prepared for winter temperatures, the result was over 50 percent of Kansas' total fruit trees were killed, with many more severely damaged. This, coupled with the drouth of the '30's, was responsible for the decline of trees in this area.

Prior to 1940 much interest had been shown by horticulturists in root stocks which showed considerable resistance to low winter temperatures. Spurred by the severe 1940 freeze, experiment station workers, nursery men, and fruit growers increased their efforts and experimented to great lengths with all types of root stocks. As a result of their work the practice of grafting the commercial apple varieties grown in Kansas with such hardy stocks as Virginia Crab, Hibernial and Clark. Since the roots and trunks of the trees are exceptionally vulnerable to winter injury, the use of hardy stocks has reduced greatly the damage from severe freezes.

Soil Management Cuts Losses

Professor Campbell mentioned that the use of hardy stocks is not the only method of reducing injury to fruit trees. He added, "Soil management practices that have been developed will aid in preventing winter injury. In orchards where erosion is not much of a factor, clean cultivation is practiced between the trees, beginning about the last of June. This practice keeps down the weeds and conserves moisture. A cover crop such as vetch or winter rye is planted in the last of August. This cover crop competes with the trees for water and causes them to harden, making them less susceptible to winter injury. In addition, the cover crop, disced under in May, increases



THIS 30 ACRE DONIPHAN APPLE orchard offers proof that fruit can resist insects, and diseases. Hardy root stocks were planted on level terraces.



Courtesy Horticulture Department

can survive in Kansas despite drouth, winter injury, in-
fests at the Northeast Kansas College Experiment Station.

the organic matter and, when a legume, fixes the nitrogen in the soil.

In orchards located on hilly sites a permanent sod of grasses and legumes is grown the year around.

Breed Hardy Fruit

Breeding of hardy fruit varieties has been carried on at many places in the country, and as a result several varieties have been developed that are quite hardy. Especially is there evidence of this fact in Kansas where some growers have had six peach crops in the last seven years. Formerly about two crops in five years could be expected.

Campbell stated, "During the winter of 1946-47 more than forty peach varieties at K-State's horticulture farm withstood temperatures of minus thirty-two degrees." He added, "Several new peach varieties show much more bud hardiness than did other varieties. This is important since many crops were formerly lost in the spring by late frosts."

Combat Drouth

Studies also have been taken in recent years in combating the effect of drouth on fruit trees. Care should be taken to select sites for orchards having deep soils with good water-holding capacities. Greater spacing between trees is now recommended, thus reducing crowding and encouraging deeper rooting. This also increases the amount of water available for each tree.

The soil management practice of al-

ternate clean cultivation in the summer and a cover crop in the winter conserves water and increases the amount available to the trees. On hilly sites, orchards are planted on the contour in most cases at the tops of nearly level terraces with grassed waterways at the ends of the terraces.

Terraces Save Water

These practices have proven exceptionally efficient in northeast Kansas. Erosion has been almost completely stopped and the level terraces have increased greatly the amount of water going into the soil. In these areas where sufficient water is available supplemental irrigation can insure the normal development of the fruit crop in drouth years.

The so called "organic era" of insecticides and fungicides dates from



DREADED FIRE BLIGHT of fruit trees can now be controlled by dilute antibiotic sprays. New sprays also make war on bugs.

the discovery of the effectiveness of DDT in codling moth control. According to Campbell, "Probably no other period in history has had so many effective materials developed for the control of fruit insects and diseases as the past 10 years."

Machines are now suitable to apply spray material much faster and cheaper than in the past. An important feature is the reduction of labor necessary to spray an orchard. With the use of new spray materials codling moths in apples have ceased to be a major problem. Cedar apple rust can be controlled by spraying and San Jose scale, which was a threat to fruit growers, is no longer an important pest.

The Jonathan apple variety is the most widely grown in Kansas. This variety has long been plagued in certain years by the dread fire blight disease. Until recently this bacterial disease has defied all types of sprays.

Recent investigations have shown very dilute sprays of antibiotic streptomycin and aureomycin to be 100 percent effective in preventing this disease, providing at least two applications are made during blossoming. This new spray may turn out to be a great development for Kansas fruit growers. Extensive tests will be made with these antibiotics in several orchards throughout Kansas.

Fruit Outlook Good

In general, it can be said that fruit production is in a healthy state in Kansas. It is true that the acreage of fruit trees has been drastically reduced during the past 30 years. But, as a result of extensive research which has resulted in better adapted varieties, improved cultural practices and new spray materials and spray machines, the Kansas fruit farmer is better equipped to cope with the problems which beset him.

High Annual Income

Drouth, low temperatures, and diseases have driven many of the marginal operators out of business. But for the most part those persons still engaged in fruit production produce a good quality product and show a high average annual return from their investment.

An important development in marketing in recent years has been the selling of fruit in the orchard and at the roadside market. Several growers have found a ready market on the tree for all the fruit they could produce. The elimination of picking costs greatly reduces the costs of production.

KANSAS FRUIT HARVEST netted about \$2 million from over nine million trees in 1950, says R. W. Campbell, Hort. professor.



Every Farm Family Needs a

Home Freezer

By Helen Hamilton

ILL BE D----- if I'll buy a freezer," the young farmer growled, slamming down the magazine he was reading.

"Oh, you just don't love me any more," his wife pleaded, on the verge of crying. "You never get me anything I want. It would be different if it were just a luxury for me, but you know we both need a freezer, Joe, and with the baby coming—"

Married a Year

Joe and Mary had just been married a year since they graduated from K-State and already they were quarreling. Mary saw the need for a home freezer on their farm and Joe, well—.

"I know, Mary, but we just can't afford a freezer now. We can't spend the money we've been saving for the baby."

At this Mary collected her wits and told Joe the facts on home freezers. She said it would be a paying proposition in just a short while.

Freezer Prevents Waste

"All our farm and garden products that usually go to waste before we can eat them could be frozen. The freezer will be just like having our own store right here at home. We can have a greater variety of food

and save shopping time as well as money."

"Maybe so, Mary, but I just don't know enough about a freezer to be able to get the right type."

"Oh, I know all about that, Joe. I've been reading up on them." Mary explained there are two main types of freezers—an upright resembling a refrigerator and a chest type similar to those used in grocery stores. The kind Joe and Mary needed depended primarily on the space they had available and their own personal taste.

A chest type would probably be best, since less cold air is lost through its top opening than from the upright freezer with its side opening, Mary concluded.

Where To Keep

"Where'll we put a freezer? The place is full of stuff as it is," Joe countered.

"All we need is a cool, convenient place," Mary answered. "In the basement, on the back porch, or in the kitchen will do. It would make no more noise than the refrigerator and create less odors in the kitchen."

"Ok, Ok," Joe agreed, "but what if it breaks down, I don't know how to fix freezers."

"You won't have to, silly," Mary laughed. "A repairman just lifts out

MAKING USE of a family size freezer is Eleanor Huguenard, grad student. Proper size is three to four cubic feet per person.

Photo by Dick Steffens

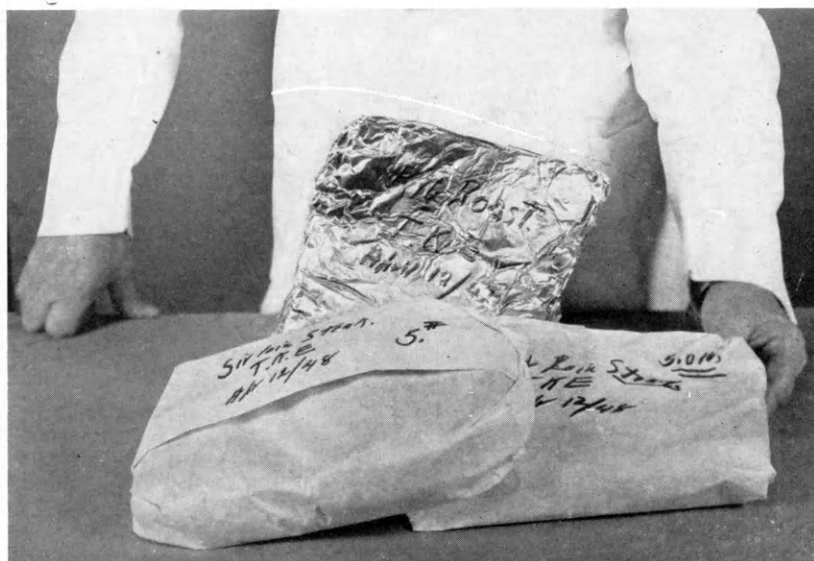


Saves Garden Products

Provides Variety of Food

Reduces Shopping Time

Cuts Grocery Bills



Courtesy, Ag. Experiment Station

FOR LARGE FARM FAMILIES who have a lot of beefsteak on the hoof the home freezer is a blessing. Half the storage space may be devoted to meat. These packages are wrapped and marked ready to chuck in the freezer.

the entire cooling unit and puts in a new one until repairs can be made."

High Food Value Insured

With Joe quieted for the moment, Mary went on to point out that in purchasing a freezer they should allow three to four cubic feet for each person. This way food is not kept in the freezer more than a year and high food value is insured. She said taping a list of the freezer's contents to the inside of the door was a good way to prevent neglecting frozen food.

"We can save and possibly make money with our freezer by storing what we grow," Mary told Joe. "At times when prices are low we might freeze some of the produce, store it, and then sell it when prices are high again."

Saves Vitamins

"If we process the food properly we can save more vitamins and minerals as well as flavor in freezing than by any other method of food preservation," Mary said. "We can harvest the vegetables and fruits for freezing at the same peak of quality we do for those we eat fresh."

"There you are," Joe sneered, "got me helping you already."

"Oh, dry up, Joe," Mary snapped. "You'll be eating more than your share of the frozen food, and it will be your job to keep the machine well oiled and free from rust, and to keep the belt at the proper tension. You can also help me defrost the freezer at least twice a year and prepare food to be frozen."

Thinking a minute, Joe said, "But we'll need a lot of other expensive equipment to do our freezing right. Let's put the freezer off until later, huh?"

Container Requirements

"No, Joe, you're wrong. Containers need only be reasonably air tight, moisture vapor proof, and shaped for convenient storing," Mary explained. "We can use anything from paper containers with cellophane lining to plain glass jars. Of course, if we use jars, we'll have to cover them with tape to prevent their breaking at freezing temperatures."

Joe was also informed by Mary that he would find it more economical to have a custom slaughterer do the initial freezing of meats. It is best to use no more than 10 percent of the freezer's capacity for straight freezing.

"Can we freeze everything we grow?" Joe inquired, his anger seemingly subsided.

Mary Promises

Sensing his apparent interest, Mary answered quickly. "No, not everything, but I'll promise plenty of sweet corn, peas, and strawberries. Lettuce and cucumbers don't freeze well, but you don't like them anyway."

"Whole tomatoes become juicy when thawed, don't they?" Joe asked.

"Yes, but tomato juice freezes wonderfully," Mary related. "Most fruits are easy to freeze except raspberries."

"We should use about half the storage space for meat," Mary said. "The space left after fruits and vegetables are frozen we can use for such specials as rolls, pies, and cakes."

She's Determined

After a little pause to catch her breath, Mary said firmly, "We're going to get a home freezer, Joe, right now."

Joe started to offer more resistance, but decided it was a losing proposition and said, "All right, Mary, you win. We'll get the freezer. But I'll expect plenty of strawberry shortcake this winter," he added, smiling reluctantly.

British Paper Says

"He's a Winner"

By Scott Chandler



A Cartoon of Dean Weber from the British Press

OUR OWN DEAN of agriculture, Dr. Arthur D. Weber, has carried his judging prestige across the seas to win him international acclaim as the first American ever to judge the greatest of all live-

stock exhibitions, the Smithfield Show of England.

"Dean Weber's performance in selecting the champions held the crowds in awe," an English reporter for the Farmer and Stock-Breeder, a leading

English agricultural publication, wrote, "and it is difficult to do full justice to the judging of Dean Weber at Smithfield. It was one of the quickest, deftest and most precise exhibitions of this art that has been seen in the championship ring since the turn of the century."

"Being as much a diplomat as a cattle judge," one reporter said, "Dean Weber observed that 'the top cattle at Chicago would fit in here at Smithfield, just as the best here would fit in there.'"

"In judging the championship animals, the Dean's prowess was plainly evident. He would walk once down the front and once down the back of the line; he would follow this by handling each animal, always with extraordinary swiftness and dexterity, always placing his hands and fingers in the same spot, moving about the animals with the rapidity of a boxer.

"When it came to the decision, he seemed to be in complete accord with the British judges. As this was a fat stock show, he was interested only in the carcass that could be hung on the rail at the immediate time of judgment. He did not look for breed character and he discriminated against the over-finished animal. His decisions were unquestioned, let alone criticized by the suspense filled on-lookers."

(Continued on page 22)



HEREFORDS, THE BEEF BREED SUPREME

You can read about the Herefords and Polled Herefords twice a month in the **AMERICAN HEREFORD JOURNAL**—the meeting place of buyers and sellers of Hereford cattle for more than 43 years. Published on the first and fifteenth of each month.

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Poultry Develops a

Pheasant-Chicken

By Helen Hamilton

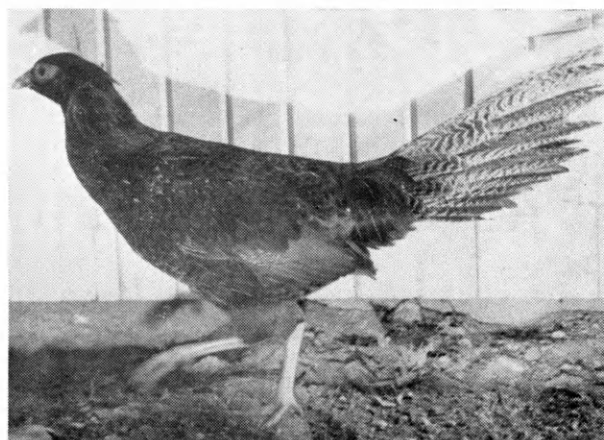


Photo by Dan Henley

PHEASANT-CHICKEN hybrid developed by Herman Smith. Commercial uses are impractical, yet research is interesting.

MANY hybrids, livestock and crops have been developed by scientists in the past. Now, out of the poultry industry, comes another: a pheasant-chicken hybrid.

This half-pheasant, half-chicken fowl was produced at K-State for the first time by Herman D. Smith, graduate student in Poultry Husbandry, as a problem in his study of genetics.

Poultrymen, for more than 100 years, have been intrigued with the possibility of combining the broad breast and hardiness of the ringneck pheasant with the prolific nature of the chicken; however, little work has been done toward developing the cross into a breed. Such a combination of qualities might be an asset to the poultry industry.

Don't Mate Often

It is easier to make such a generalization than to put it into effect, Smith found. In the first place, pheasants and chickens don't mate very often, though natural matings have been observed when male pheas-

ants become tame enough to venture into chicken yards.

Smith used artificial insemination to produce his hybrid offspring. He found, for natural matings, both birds had to be isolated from all others for some time before they would mate and then the eggs laid were infertile and would not hatch.

Natural matings between these different species have always been of the pheasant male and a chicken female, and in the artificial breeding work, also, this cross has been most successful; but Smith was able to produce two chicks from a chicken male-pheasant female cross. The appearance of the chicks from both crosses was similar.

Even by using artificial breeding, he got very poor hatchability. Of 72 eggs laid by the hens in his experiment, 15 were fertile and only three hatched. Not very economical, he points out.

After a few hybrid chicks finally were hatched, Smith discovered another obstacle to commercial produc-

tion of these birds. Like the mule, also a hybrid, they cannot reproduce. There is no record of the female hybrids laying eggs. Every pheasant-chicken must be the offspring of pheasant and chicken parents.

Although no hybrids lay eggs, Smith did raise one female bird that set on eggs, hatched them and brooded the chicks.

One Male Hybrid

At present he has one adult male hybrid, which is kept at the Manhattan zoo. It is a cross between a male ringneck pheasant and a female bantam.

This chicken-pheasant, Smith describes as a shy, nervous bird most resembling a pheasant in general outline, though apparently the chicken and pheasant are related closely enough so most dominant characteristics of the chicken appear in the hybrid.

This bird's temperament—more wild than tame—shows a pugnacious streak now and then, resulting in occasional fights. He has neither a comb, spurs, nor fringed feathers of the chicken, but can boast a coarse, guttural voice. However, his pheasant-like crowing is accompanied by a rapid beating of wings. He is brown, although other crosses have produced red, buff, and white hybrids. His tail raises above the level of his back like a chicken's, rather than extending straight.

Smith hasn't eaten any of the hybrids so he is unable to say if the broad breast combined with the meat quality of the chicken is an advantage.

(Continued on page 24)

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Husband-Wife Team Takes

Pictures Without Camera

By Herb Lee

TAKING PICTURES without a camera is what happened at Kansas State when a husband and wife teamed up. Mr. and Mrs. Abraham Eisenstark have developed and used the process of cameraless photography of germ cultures at home for years.

Eisenstark, a bacteriologist, says the method speeds up research on dangerous animal diseases. Present research in conjunction with the Agricultural Experiment Station is on Newcastle disease in chickens.

Is Simple Process

"It's really quite simple," Eisenstark says. "We merely use the specimen itself instead of a negative."

The specimen is placed on a film holder and inserted in a photographic enlarger. Its shadow is then projected directly on sensitive light paper or film. Germ colonies growing in small glass petri dishes are best suited for making these pictures.

The old saying, "Two heads are better than one," seems to have won out in the case of the Eisenstarks. Actually, K-State is getting two scientists instead of one for its money.

Eisenstark has a Doctor of Philosophy degree from the University of Illinois in bacteriology and his wife, a Master's degree in zoology.

Couple Combined Talents

"We were both doing research, though in separate departments, at the time we met," Eisenstark said. So the two decided to combine their talents and as Eisenstark explains it, "My wife has been helping me ever since."

It was in 1946 that the Eisenstarks started using cameraless photography. Eisenstark worked three years at Oklahoma A & M and has spent two years at Kansas State. "We needed a



Photo by Bob Ecklund

THE EISENSTARKS SHOW how they take pictures without a camera. They just put a culture in the enlarger and make prints.

method to make more rapid recordings of results from our experiments," Eisenstark related. And like all inventive Americans, the Eisenstarks developed their own process.

Work at Home

Since Eisenstark has been at K-State the couple have used an enlarger that they installed in their home. "We found we could photograph ten culture plates in five minutes, whereas taking pictures with a camera and developing them properly would take hours."

As husband and wife work, little daughter Ramalyn, 3, and son David, 1, play nearby. Helping "hubbie" is a spare time proposition for Roma with the children and household to run. They have a neat, modern cottage in the newly built Phelps addition of Manhattan.

For Roma it's a far cry from doing research full time as she did when working on her master's, but she

seems to be perfectly content assisting her husband.

Eisenstark admits one of his hobbies is photography. His avid interest has now, of course, led to the practical use for his enlarger. The couple work at home since there is no darkroom in Eisenstark's college lab. Then too, working at home gives Roma a chance to show hubby she hasn't forgotten her "book learnin'."

Small Contribution

Eisenstark modestly explained that taking direct pictures is but one of a number of techniques in bacteriological research. It is but one contribution which has had only limited use before. Eisenstark admits that he has improved the process by such methods as using dyes in his cultures to get better picture contrast.

The Eisenstarks have well proved that a husband-wife team is a good combination. They are continuing their pet project and discussing and hashing over research results at the end of each day.

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Prof. Bell

(Continued from page 10)

Kansas Livestock Association; F. G. Welch, dean and director of the Colorado Experiment Station; O. R. Peterson with the National Auction company; Walter Lewis, prominent breeder of polled Hereford cattle who judged Australia's large cattle show; Walter Atzenweiler, chairman of the Kansas City Chamber of Commerce agricultural committee; and R. B. Elling, chairman of the agricultural committee of the Wichita Chamber of Commerce and superintendent of college judging teams at the American Royal.

Bell Seldom Home

As in the life of any coach, there isn't much time for home life. In fact, during the years Bell was livestock coach he never had a Thanksgiving dinner at home with his family. That day always was spent at the University of Nebraska judging or on the train bound for the national contest.

Mrs. Bell takes an active interest in whatever her husband does. She would accompany him to practically all the contests. She became personally acquainted with the team members and still calls them "her boys." She has a family of approximately 150 boys.

Couple Has Daughter

The Bells have one daughter who attended K-State and is now Mrs. John Perrier. Her husband was a member of the team in 1938. He is now in charge of land and cattle loans at a bank in Dodge City. They have two children, a boy and girl.

Now that the life of Professor and Mrs. Bell has quieted down somewhat their main hobby is raising flowers. But a hobby in itself for the Bells is keeping track of the former members of their judging teams.

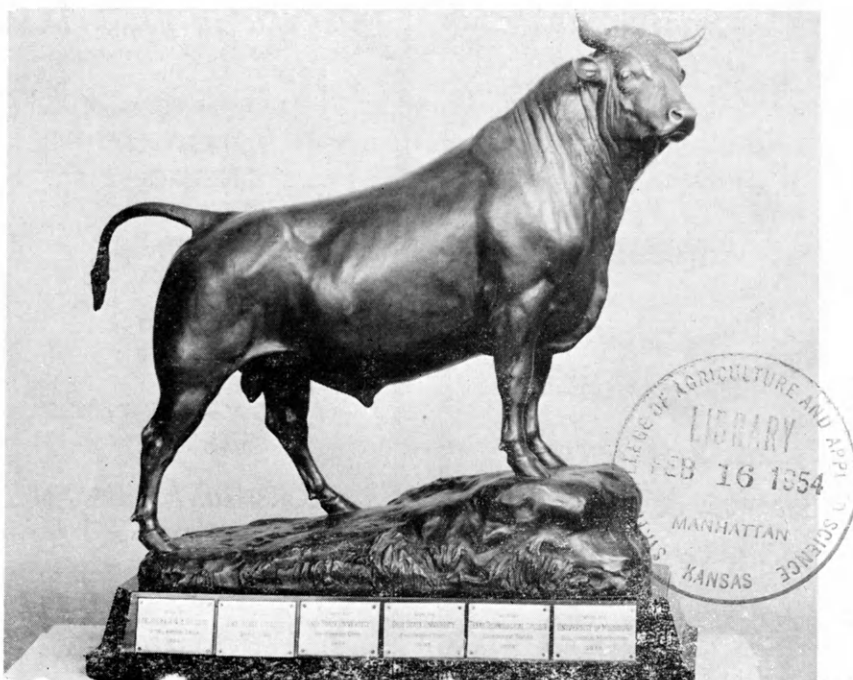
"All right back there?" called the conductor from the front of the car.

"Hold on!" came a feminine voice. "Wait till I get my clothes on."

The entire carfull craned their necks expectantly as a girl got on with a basket of laundry.

Shotgun wedding: A case of wife or death.

Tough Beef...



Courtesy Ag Experiment Station

THIS IS THE "BRONZE BULL" that Kansas State College judging teams won three years in a row to gain permanent possession while coached by Prof. F. W. Bell.

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Carnations

(Continued from page 9)

humidity high and hasten growth. Carnations are propagated from cuttings since they are hybrids and seed is useless.

After three weeks the carnations are planted in bands of soil. From here they go into greenhouse beds of two parts soil, one part peat moss or organic manure, and one part sand. As the carnations grow, they are trained between wires and pinched back to build a plant that will have about six branches. These branches are disbudded so only one flower remains on each. A good yield is eight to ten flowers to each plant. Plants will produce indefinitely in a greenhouse, yet they are usually kept only one year.

Combat Problems

Carnations are very susceptible to some diseases and insects. The greenhouse soil is treated with steam before the flowers are planted, to kill the bacteria that cause wilt. Red spiders, the worst insect pests of the carnation, are being controlled by a new spray bomb. Floriculturists at K-State are now trying to find ways to combat a new virus disease that causes the flowers to form with only three or four petals.

So you see, it is a long, tedious process to grow that floral valentine you may be giving your girl on February 14.

Dean Weber

(Continued from page 18)

It was noted by a British writer that the "remarkable American" never forgot an animal once he had handled it and he remembered the characteristics that had beaten it.

The Dean was greeted in England with warm enthusiasm by the English and Scotch cattlemen. He was given a private car and a chauffeur for his convenience.

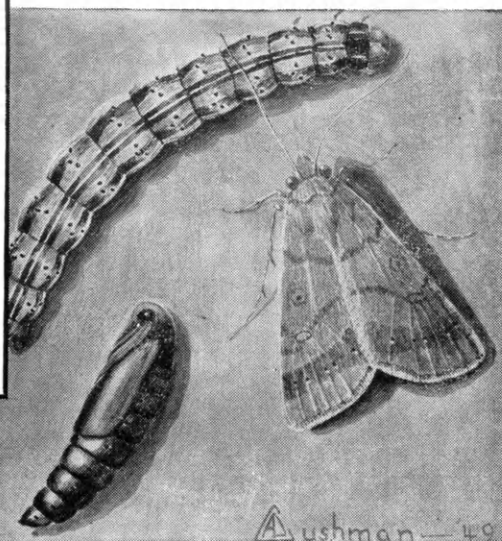
Though the Dean had a tight schedule to meet, he said the trip was one of complete enjoyment and utmost interest. Besides judging the Smithfield Show, he had the opportunity to tour parts of England and see some of the fine herds of cattle.

Dean Weber's national fame has long been recognized but with his magnitude of acclaim broadening into international circles, it is quite evident that we here at K-State are prouder of him now than ever before.

insects

YOU SHOULD KNOW

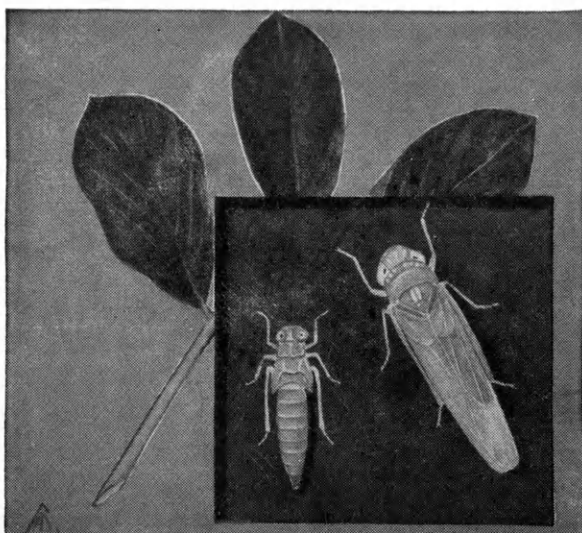
*How To Identify
These Crop Destroyers*



BOLLWORM

Heliothis armigera (Hbn.)

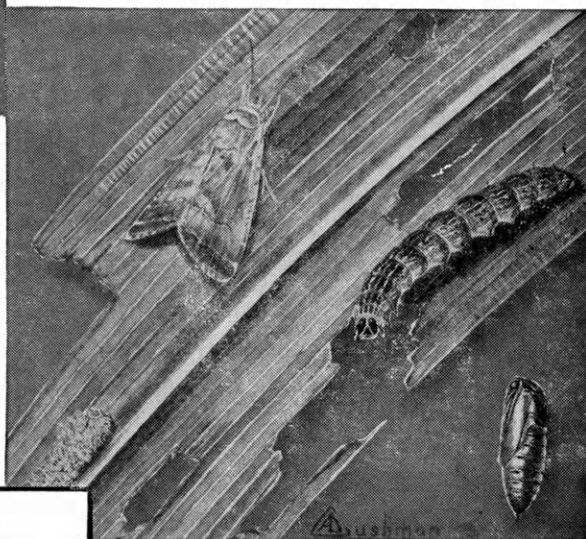
A major cotton pest, the newly hatched bollworm feeds on leaves and then attacks squares and bolls. Greatest loss is caused by tunneling into and destroying bolls. Color varies from pink, green, to almost black. The full-grown worm is about 1½ inches long. The female lays about 1,000 eggs, particularly on growing tips, squares and bolls.



POTATO LEAFHOPPER

Empoasca fabae (Harr.)

This leafhopper is one of the alfalfa producer's greatest enemies because all stages of the pest suck juices from alfalfa plants, stunting growth and reducing yield. They are also the cause of "hopper burn" on potatoes. A tiny, pale-greenish insect, this leafhopper is not found in Northern states during winter, probably flying in from the South, where they breed during the entire year.



ARMYWORMS

Pseudaletia unipuncta (Haw.)
and *Laphygma frugiperda* (A. & S.)

Armyworms are a major pest of cereal and forage crops, their damage sometimes totaling millions of dollars. Armyworm invasions commonly follow cold, wet springs. The tiny, newly hatched caterpillars feed near the ground. Fully grown, they have enormous appetites, the noise of their feeding making a rustling sound in the fields.

toxaphene

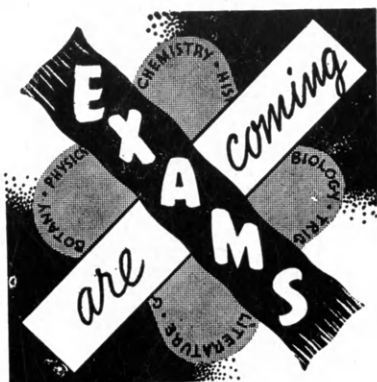
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Vets-Farmers Co-operate

(Continued from page 11)

for Bang's or TB in the winter when a vet's work, and yours too, is slack. Treating animals at the right age is easier for everyone. It's best to vaccinate and castrate stock while they are young and relatively easy to handle.

"However, every stockman should be prepared to handle emergencies, such as bloat," Dr. Twiehaus said regarding home treatments. Farmers also can de-horn and castrate their livestock without a vet's assistance.

Combine Efforts

Closer co-operation between stockmen and veterinarians who serve them will save effort and time and spell larger incomes. An effective animal disease and health program calls for the best combined efforts of stockmen, veterinarians, animal husbandry men, research men, and regulatory officials.

To you, the stockman, and to human welfare the veterinarian—your veterinarian—contributes protection to the animal world against vicious enemies which otherwise would have destroyed them.

Getting together is a beginning; keeping together is progress; working together is success.

Pheasant Hybrid

(Continued from page 19)

He said besides the possible improved food quality, undesirable traits such as slow growth and a wild, nervous disposition might also be inherited from the pheasant parent; another factor causing the hybrid to be an uneconomical, though interesting, bird to raise.

Teen-age Daughter (as the radio ground out the final notes of the latest swing hit): "Did you ever hear anything so wonderful?"

Father: "Only once, when a truck loaded with empty milk cans hit a freight car filled with live ducks."

She: I'm a good girl.

He: Who asked you?

She: No one.

He: Then no wonder you're a good girl.

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THEY AVERAGED 3.17 LBS.

IN NINE WEEKS WITH MOORMAN'S

Total feed consumed per pound of gain, 2.37 pounds. Total cost per pound of gain, 12.57c.

You, too, can get more chicken from less feed if you will multiply the value of the good yellow corn you have right on your farm. The chicken is in your corn. By simply combining 100 pounds of MoorMan's CoxiCurb Mintrate with 200 pounds of your yellow corn, you have the highest energy, lowest fiber chick starter available anywhere. A ration containing less than 3% fiber. CoxiCurb Chick Mintrate is a combination of proteins, vitamins and minerals, designed specifically not only to supplement but to bring out the feed value in your yellow corn. It also contains an ingredient to help lick death losses from that old poultry scourge, coccidiosis.

Here are 7 big reasons why it will pay you to feed MoorMan's CoxiCurb Chick Mintrate to your starting and growing chicks this year:

1. You buy only $\frac{1}{2}$ of your chick starter off the place. You have the other $\frac{1}{2}$ right in your own corn crib. *Buying $\frac{1}{2}$ of the ration from yourself cuts your feed bill in half—saving you freight and sales costs on $\frac{1}{2}$ of your chick ration.*
2. Corn and Mintrate make the highest energy, lowest fiber chick starter anywhere—less than 3% fiber. *In fact, fiber has been removed from some of the ingredients in Chick Mintrate.*
3. Your ration is all chick-nourishing feed—no valuable ingredients removed from your grain.
4. You spend less dollars out of your pocketbook—about $\frac{1}{2}$ the money you would ordinarily spend.
5. This famous Mintrate now contains an ingredient that helps prevent serious death loss from coccidiosis.
6. Easiest to use concentrate on the market. *Combining corn and Mintrate is simple and easy.*
7. Low cost gains and fast growth proved by hundreds of thousands of MoorMan customers on millions of chicks the past four years.

BUY NOW FOR THRIFTER FLOCKS . . . protected against profit-robbing coccidiosis . . . at lower cost to you. Ask your MoorMan Man about MoorMan's CoxiCurb Mintrate for Chicks, or regular Mintrate for Chicks. He has both. With either you will get greater growth energy out of your own corn . . . outstanding gains at small cash outlay. Thousands of poultry raisers have switched to MoorMan's in the past four years for faster growth of healthier chicks at **LOWER COST**. Call or see your MoorMan Man today—or write MoorMan Mfg. Co., Dept. O4-2 Quincy, Illinois, for prices and full details.

MoorMan's^{*}
(Since 1885)

^{*}Trade Mark Reg. U. S. Pat. Off.

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Feed Hogs Milo

(Continued from page 13)

but assuming corn to be worth about \$1.50 a bushel, a hog raiser (according to the scale) could afford to substitute a grain sorghum in the ration at not more than \$2.45 a hundred pounds.

Many hog raisers in Kansas who have fed sorghum grain like to mix it with their own supply of corn. Some grind mixtures of as high as 80 percent milo grain and 20 percent corn, mixing in their protein supplement in the same operation. They report very satisfactory results from milo fed this way, and some believe it can be fed cheaper than corn.

(For your own reference, you can get a copy of the grain substitution scale mentioned above, Circular 299, "Grain Substitution in Feeding Livestock," from the Agricultural Experiment Station at K-State.)

"If it's funny enough to tell, it's been told; if it hasn't been told, it's too clean; and if it's worth reading, the editors get kicked out of school."

The stork is not a very serious bird—he's always kidding around.

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