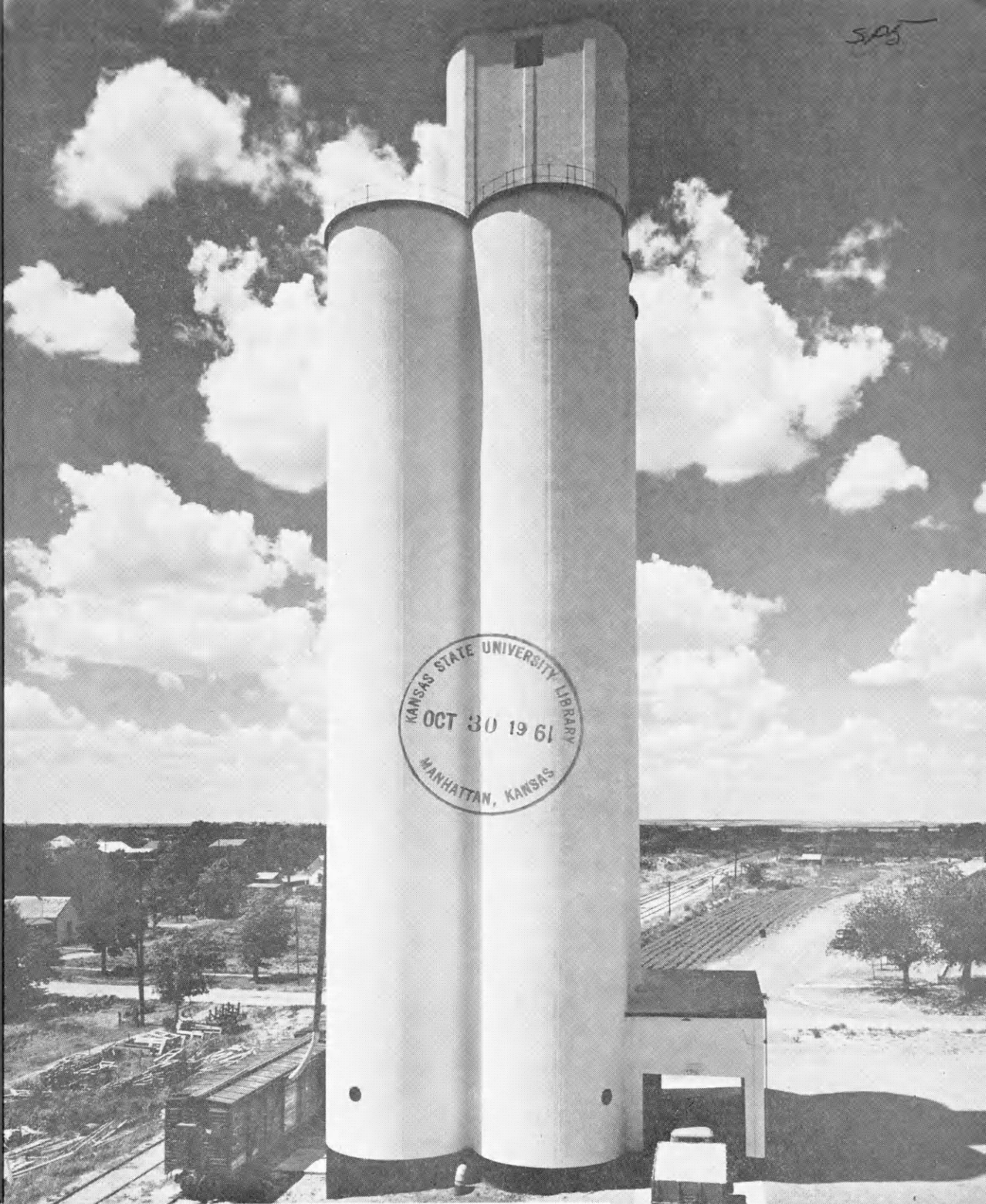


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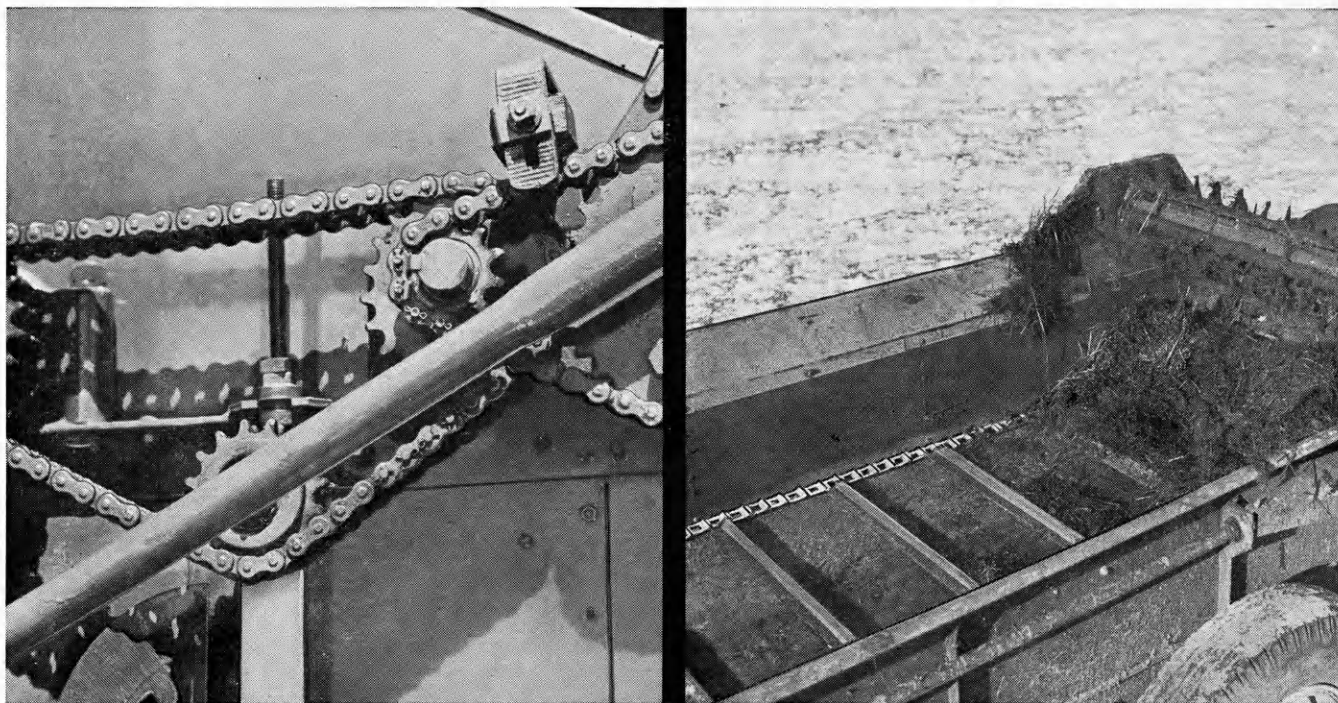
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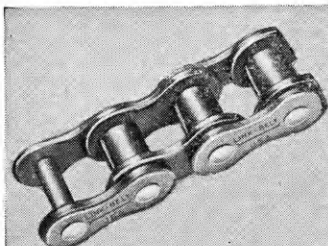
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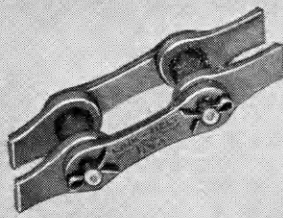
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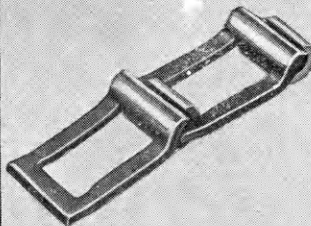
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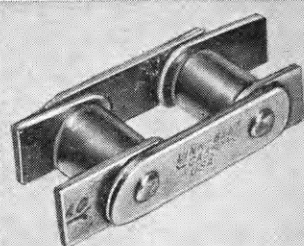
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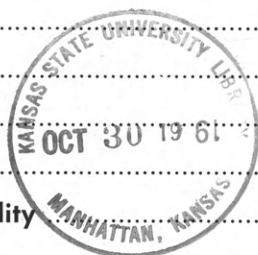
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October 1961

No. 1

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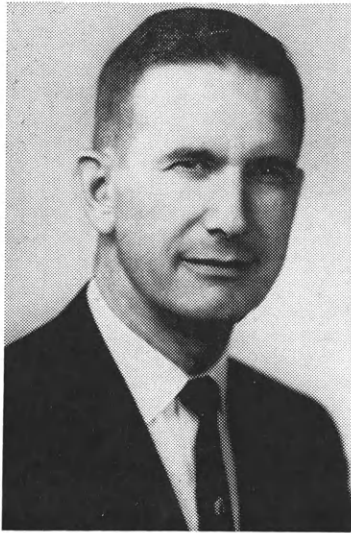
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# Editorial...



Frank R. Carpenter

THE Ag Student staff cordially welcomes back Frank R. Carpenter to the K-State campus. For those of you who are here at K-State for the first time, Carpenter succeeded Assistant Dean Clyde W. Mullen, who retired July 1.

A native of Troy, Dean Carpenter was reared at Stockton and was graduated from Webster rural high school in 1938. Prior to World War II he taught elementary school for three years

and attended three different schools, including K-State briefly.

He was a machine operator and crew chief for Cessna Aircraft company at Wichita for two years.

After spending two years in the navy, he returned to K-State in 1946 to resume his education. Dean Carpenter received his bachelor of science degree in agricultural education in 1948 and his master of science degree in the same field in 1951.

Prior to receiving his position here at K-State, Dean Carpenter was executive secretary for the Kansas Association of Future Farmers of America and an assistant state supervisor for vocational agriculture.

While welcomes are in order we certainly don't want to forget all of our readers. To those of you who are reading the Ag Mag for the first time here at K-State, we're glad you're here. The old timers around here probably know our office is in 211 Waters Hall. If you have a suggestion or a big healthy gripe just let us know. We don't guarantee that your gripe will be reason enough to make a policy change, but we will listen and appreciate what you have to say.

Last year we had the top-ranking mag in national competition, and we hope to do as good this year. A lot of our staff members are a little short on experience, but we will do our best to turn out a good magazine. All we ask is that you read the mag and let us know what you think.

*Norman Werner*

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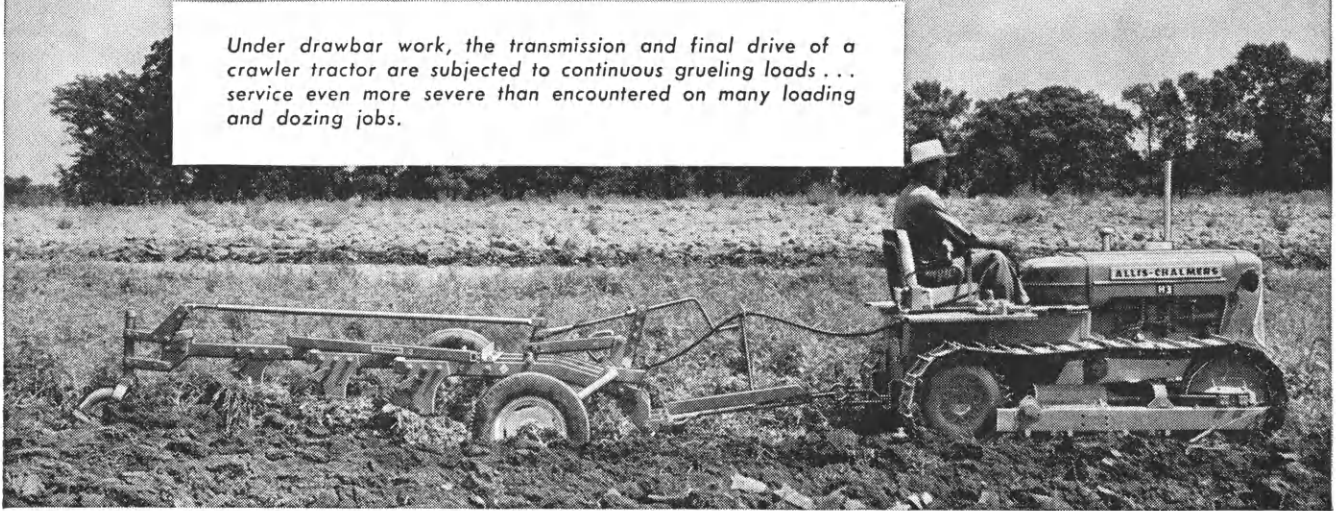


*Good Seed Is Good Business*

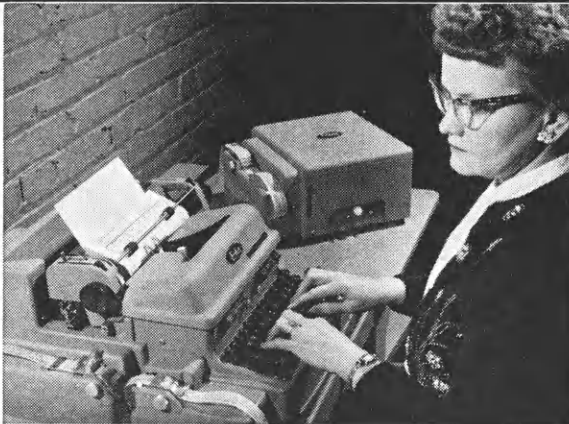
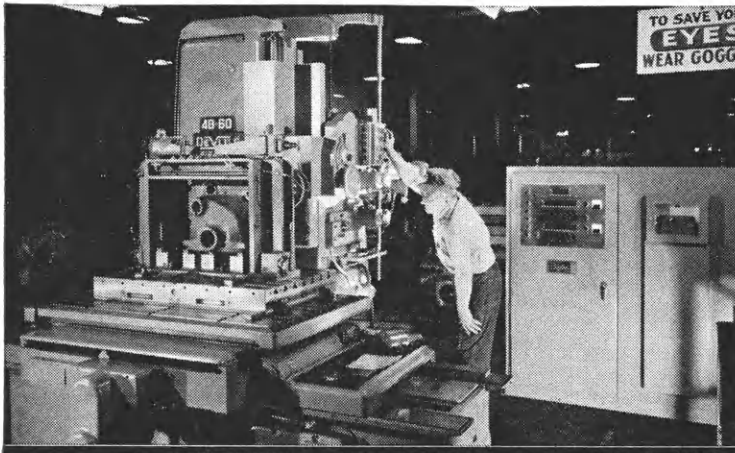
The **K**ansas **C**rop **I**mprovement **A**ssn.  
Manhattan, Kansas

## Dollar-making differences don't just happen...

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# Pranksters Produce Halloween



Looking into the pumpkin to see what makes it glow, this youngster sees the candle symbolizing the spirit of Jack who was sentenced to roam the world until judgment.

by Linda Kernohan

**I**F YOU FEEL like pulling some sort of prank the eve of October 31, go right ahead! According to legends arising from St. John's Eve or "Free Night," a feast formerly celebrated in both England and Ireland, people were allowed one night out of the year to exhibit a sort of madness which made them unaccountable for their deeds. The prankish nature of Hallowe'en probably grew out of this idea.

Hallowe'en is one of our oldest holidays, dating back to when the Celts (the first Aryan people who came from Asia to settle in Europe) celebrated the new year on the first of November. They believed that on the last night of the old year, the night of October 31, the souls of the

dead were allowed to return to their homes. Witches, demons, hobgoblins, and all kinds of evil spirits were believed to roam the earth on this night.

Because of the belief among primitive peoples that fires would frighten away evil spirits, great bonfires were kept burning on this night in many parts of England in hopes of warding off the ghosts and goblins.

People are less superstitious today and our modern ghosts and witches are merely children dressed up in old sheets or weird costumes.

## Jack-o'-Lantern Is Old Custom

Many old superstitions and customs have developed throughout the years and have contributed in making Hallowe'en—All Hallow's Eve, later shortened to Halloween—what we know it as today. The jack-o'-lan-

tern, for example, is the result of an old legend about an Irishman named Jack, who, because of his stinginess, was kept out of heaven. He was not allowed to enter hell because of all of the jokes he had played on the devil. Jack was condemned to roam the earth, carrying a lantern, until Judgment Day. The candle inside the pumpkin is, symbolically, poor Jack still looking for a home.

## Black Cat Was Sacred

The hollowed-out pumpkin in which the candle sits had its origin in Scotland. Children took the largest turnips they could find, scooped them out, and carved grotesque-looking faces in them. Later they found that a pumpkin could be made to look even more grotesque.

Remember the superstition that it's bad luck to let a black cat cross your path? The black cat was held sacred by the ancient Druids of Ireland, but it was considered a creature of the devil by the Irish, who gave it its bad-luck character. A common greeting upon entering an Irish home was, "God save all here—except the cat." The worst fate possible was to meet one along the road on Halloween.

The popularity of telling fortunes on Halloween probably stems from the fact that this was the beginning of the Celtic New Year, and the first day of the new year has always been considered a good time to foretell the future. Many of these future predictions were made to young girls, telling them who their husbands were to be.

If a young girl made a cake of flour, salt and soot, ate it and went to bed, the man who came to her in her dream offering her a drink of

# Tradition

water was the man she was to marry.

A young lad, wishing to know the identity of his future wife, would put nine grains of oats in his mouth and walk abroad until he heard her name spoken.

Throwing apple parings over the left shoulder is still done by some on Halloween today as it was many years ago. Swing the unbroken paring over the head three times and let it drop to form the initial of your beloved.

Girls also believed that if one sat at midnight before a mirror eating an apple, the image of her future husband would suddenly appear in the mirror. If no image appeared, it was assumed that the girl would remain a spinster. Hence, the importance of the apple at Halloween. Bobbing for apples remains one of the most popular Halloween party games.

## Children Enjoy Costumes

The "trick or treat" element was contributed by the people of Wales. They looked upon Halloween as a night of charity for the poor. In some communities today, certain groups go around on Halloween collecting items for national welfare organizations. Children enjoy dressing up in costumes and going around the neighborhoods to see if their friends can guess who they are, and to receive the popcorn balls, candy apples, cookies and candy that people have ready for the little trick-or-treaters.

Halloween in America, though lacking the superstitious character of the Old World holiday, does retain many of the old customs—masquerading, visiting from house to house, bobbing for apples, and eating the ever-popular apples and nuts of the

fall season. Although mainly a holiday for children, it's a natural for a party at any age!

Long ago it was believed unsafe to venture out on Halloween, for witches and mischievous spirits were supposed to be abroad. But now we wouldn't for anything miss meeting the jolly goblins who do their spooking on October 31. It is the one holiday of the year that gives children freedom for fun and pranks. Supposing a gate disappears on Halloween and is found the next day hanging from a tree branch—it was only witches at their tricks! Spooks get blamed for causing doorbells to ring and tick-tacks to tap the windows! However, if a horse and buggy disappears on October 31 and is found November 1 on top of Anderson hall, it is highly unlikely that

the administration would blame it on spooks. Not today!

Old-timers have observed that the tricks played on people today are a far cry from the destructive acts committed several years back. If, by any unfortunate destiny, there is a splintering crash in the quiet night hours as some outhouse is torn from its moorings, it is very likely that the act may be directly traceable to a dinner conversation at which some father recalled the fun kids had on Halloween when he was a boy.

Way back when ghosts and witches were supposed to wander across the earth, Halloween may have been an important holiday for grownups. But today it is a time for boys and girls. Since it is one of the happiest holidays of the whole year, Halloween is not likely to disappear soon.



Weird costumes help the "Trick or Treater" earn a tasty hand-out on Halloween night. This traditional garb, along with superstitions and pranksters, originated in Wales.

# From the Dean's Office

by C. Peairs Wilson

I WANT TO take this opportunity to welcome all the students in the school of Agriculture to the campus. To returning students, some new developments will be apparent. The old World War II barracks west of Waters Hall have been removed and a start has been made on the fine new Physics and Mathematics Building. The new Milling wing of Waters Hall is equipped and in operation, and a new girls' dormitory is well under way. Before long, construction will be started on the Dairy-Poultry Science Building to the west of the Animal Industries Building. The School of Agriculture has a new Department this year—the Department of Bio-chemistry with Dr. Howard Mitchell as Head of the Department. Two Departments in the School have changed their names—the Poultry Husbandry Department is now the Poultry Science Department and the Dairy Husbandry Department is now the Dairy Science Department. The name of one curriculum has been changed—Landscape Design is now Landscape Architecture.

Several new staff members are on hand this year, and some old timers are missing from the classroom. Dr. Aubel, Professor Willis, and Dean Mullen retired this summer. In the Dean's Office, Assistant Dean, Frank Carpenter, has taken over Dean Mullen's work. Dr. John Nordin is the new Department Head in Agricultural Economics. Professors James Craig of the Poultry Science Department, Ross Mickelsen of the Dairy Science Department, Carl Menzies of the Animal Husbandry Department, and Roscoe Ellis of the of the Agronomy Department are on leave this year. A new face in the Horticulture Department is Professor Charles De Deurwaerder who will teach courses in Landscape Architecture.

Enrollment this year in the School of Agriculture appears to be about the same as last year—maybe a little higher. This may be the first year since 1948 that enrollment will be up.



We hope you will find this an interesting and even an exciting year. Among the prominent speakers who will be on the campus are Mr. Herschel Newsome, Master of the National Grange and Mr. Charles Schumann, President of the American Farm Bureau Federation. Last year we had Mr. James Patton, President of the National Farmers Union. We hope you will enjoy your year and profit greatly from it.

Hope to see you at the Barnwarmer.

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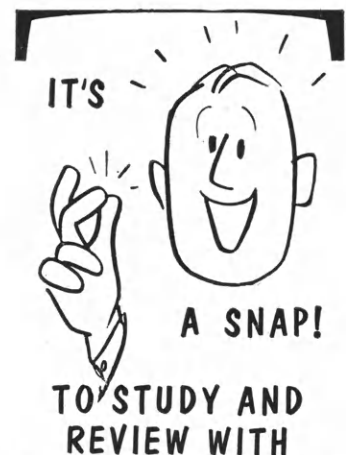
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# Feed the Grain Bank

## Livestock Feeders May Save Time and Money at Their Local

by Neil Dowlin

**B**ANKING with grain instead of cash?!! Livestock feeders in the midwest have such a set up in the form of grain banks.

The concept is basically one where the feeder can haul his grain to the elevator at harvest time and withdraw it later in the form of processed feed. The feeder puts grain into the elevator with the *intentions* he'll take it out in processed form.

Formal grain banking operations are relatively new so no set rules are established about them. The usual procedure is that the elevator charges for the storage, processings, and handling operations. On the other hand some elevatormen believe they can offer one of these services free or at less than retail because of the margin on the concentrates and supplements they sell in the deal.

To explain how one operation works, I talked to Mr. John Schulte general manager of the Mitchell County Farmer's Union Cooperative association with headquarters in Beloit. I also talked to Harold Pruitt, who farms near Barnard, to get an idea of how he used the grain bank at Beloit, which is a member of the Mitchell county co-op system.

I learned that Harold Pruitt uses the grain bank in his hog operations. He breeds about 20 sows to farrow during August and feeds the pigs to weaning age of about nine weeks. He then selects new gilts from the litter and sells the sows and the remaining pigs. Twenty gilts are fed and used to repeat the cycle.

Pruitt changes the pig ration about every three weeks after they start on the creep-feeder at age of two or three weeks. He feeds a starter ra-

tion then switches to a grower ration. A third ration for the pigs makes use of his own grains such as barley, grain sorghum, plus supplements and concentrates. The first two rations are of a commercial pelleted type. He also hand feeds the selected gilts on rations using his own grains.

The Beloit elevator keeps a record of the rations Pruitt uses so he need not specify the desired formulation each time he drives over the scale. This comes in very handy during the busy seasons on the farm. Pruitt can send his wife to town with the truck and not worry about her knowing what formula he needs.

"I feel it wouldn't pay me to buy my own equipment for the prices the elevator charges me for the services," says Pruitt. He takes his barley and

sorghum grains to the elevator at harvest time or when he has slack time between farming operations. He prefers to haul it to the elevator during harvest because it "... saves me the job of handling it a second time," he says. The elevator is set up to deliver the feed but Pruitt prefers to haul it himself.

### Keeps Breeding Stock Healthy

Most of Pruitt's feeding knowledge has been accumulated from experience. He does follow K-State research recommendations, especially what pertains to breeding stock. By following these recommendations he has been able to keep his breeding sows in good health which gives him larger litters, he says.

The Mitchell county co-op consists of six elevators scattered around



Haul your harvested grain to the elevator and bring back processed feed this winter.

# Way

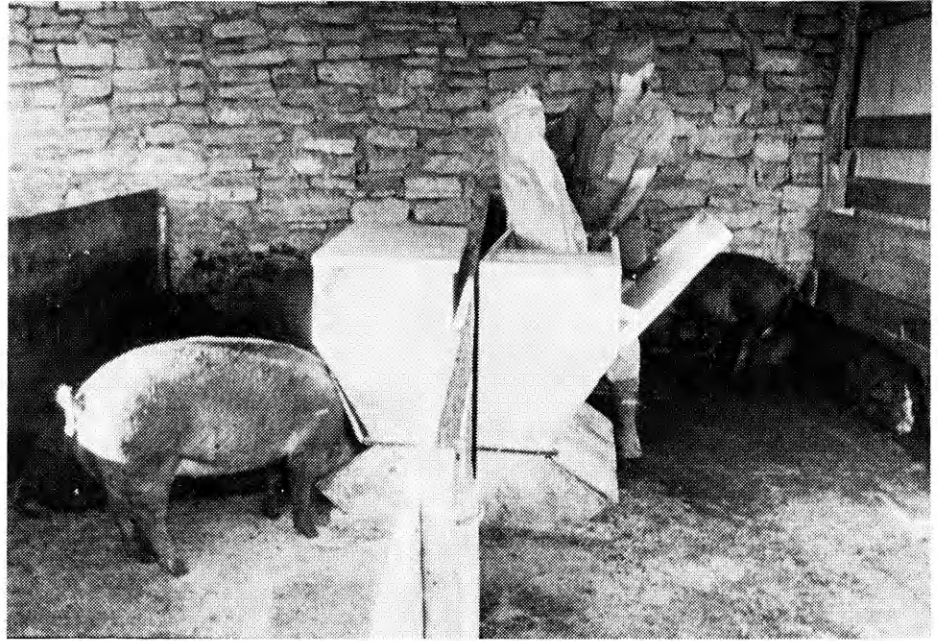
## al Elevator.

the Beloit headquarters. Each elevator is set up to give the service Pruitt gets in Beloit. To find out more about the actual grain bank operation I talked to John Schulte, who is general manager of this co-op group. Again we find this is not essentially a typical operation but just one of a number which is in operation.

### Deposits Grain During Harvest

When Pruitt brings his grain in to the elevator the scale operator makes out a load ticket on the grain and then directs the load to be dumped. A record is made of the "deposit" much as is done with money in a checking account at your bank. The scale ticket is your deposit slip.

When a load of feed is ground, the amount of the withdrawal is sub-



The use of good quality low cost feed with a minimum of time and effort makes larger feeder profits. Grain banks offer you all this with a 'withdrawal' order by phone.

tracted from the original balance and you have a new balance. When Pruitt overdraws his "account" he may pay for the overdrawn grain or he can bring in enough grain to put him back in the "black" again.

The Mitchell county grain bank formally started operations last fall at the beginning of the grain sorghum harvest. The feeders who use the service pay storage and handling costs. The rolling, grinding, and mixing charges are the same as if a non-grain-bank user had brought in a load of grain to be processed. If Pruitt wants to add concentrate he is charged at the regular retail price and the additive is mixed in with the processed grain.

### Elevator Insures Grain

The maximum amount any one depositor may keep at the elevator is 1,000 bushels. There is no minimum amount he must keep in the elevator. In this particular instance the elevator insures the grain against any damage and also stands the shrinkage due to moisture, etc., says Schulte.

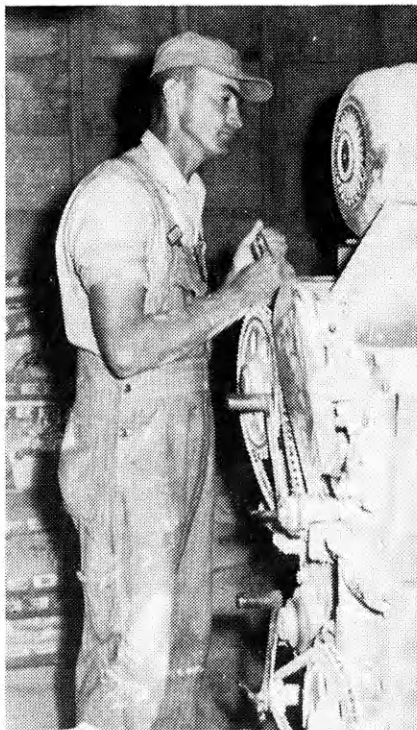
The Beloit elevator maintained a balance of about 18,000 bushels in its grain bank from harvest time last fall until early spring. Each of the

six elevators in the system are equipped with four 250 bushel holding bins and a roller mill with a 400 bushel an hour capacity. Mixing molasses and other supplements can be done before dumping the ration into the truck. The ration can be either sacked or handled in bulk form.

The grain bank idea seems to be growing in Kansas because of the convenience for the feeder and because the custom milling firms find it brings them additional trade. It is known that 45 grain bank firms exist in Kansas as of early 1961, according to Richard J. Herder of the K-State agricultural economics department.

This relatively new way of merchandising feeds has come about because custom milling firms find it does several things for them that all add up to increased feed volume and better use of their present facilities. It also means that feeders don't have to invest in the machinery and handling equipment that it takes to feed their own ration formula. Because it is new, few patterns of operation are alike in any two grain banks.

Convenience seems to be the word for the grain bank idea. But if you are short of help, short of adequate milling equipment, and perhaps short of storage space too, then grain banking might help you. Consider the cost of upkeep for the above and you may save money.



Grain banks cut equipment costs, provide storage space, and offer you convenience.



# Avoid Those "Dingy Kitchen Blues"

Careful planning will give you an efficient, glamorous kitchen that will minimize fatigue.

by Doris Imhof

**H**OMEMAKER—here are some ideas for you if that dingy old kitchen of yours is getting on your nerves!! There are sure to be some helpful ideas also for you ladies who are planning a new kitchen. Make your kitchen one which will give maximum efficiency and enjoyment. Whether you are building a new kitchen or remodeling an old one, it is important to keep kitchen work and fatigue at a minimum.

Be careful when planning the location of the kitchen in your home so it doesn't isolate you from the rest of the family.

For ease and efficiency you'd probably want to work in a right to left sequence around the kitchen. Best planning allows a work counter or mixing area to be adjacent to the refrigerator. The refrigerator door should open away from the mix center. In the right to left working sequence you may have the refrigerator on the right, then the mix center, and on around to your left the range. On the right side of the refrigerator you may find it conven-



A kitchen like this has plenty of storage space near the sink to store dishwashing equipment. A work area on each side of the sink comes in handy when washing dishes.

ient to have the sink area and storage for vegetables.

Centers of activity in your kitchen should include (1) mixing (2) planning (3) food preparation (4) clean up (5) cooking, and your family may wish to include (6) eating.

At the kitchen planning center you will find it very handy to have a telephone, family bulletin board, and a small radio. Cook books also may be kept here. A desk arrangement with a chair is the most desirable type of planning center.

## Provide Adequate Storage

You will find it easy and enjoyable to work in a kitchen which has adequate storage for the necessary items at each work center. The kitchen will lose much of its step-saving

efficiency if you can't arrange and group food supplies, utensils, and dishes according to their use.

The distance you travel between sink, stove, and mixing center should be as short as possible. But be sure to allow sufficient storage space and work area between each.

## Plan Work Surfaces

Since the sink area is one of first use for many activities necessary supplies should be conveniently stored there. Plan adequate space for dishwashing equipment. Included here also are dishwasher and garbage disposal. A bin for root vegetables is handy in this area.

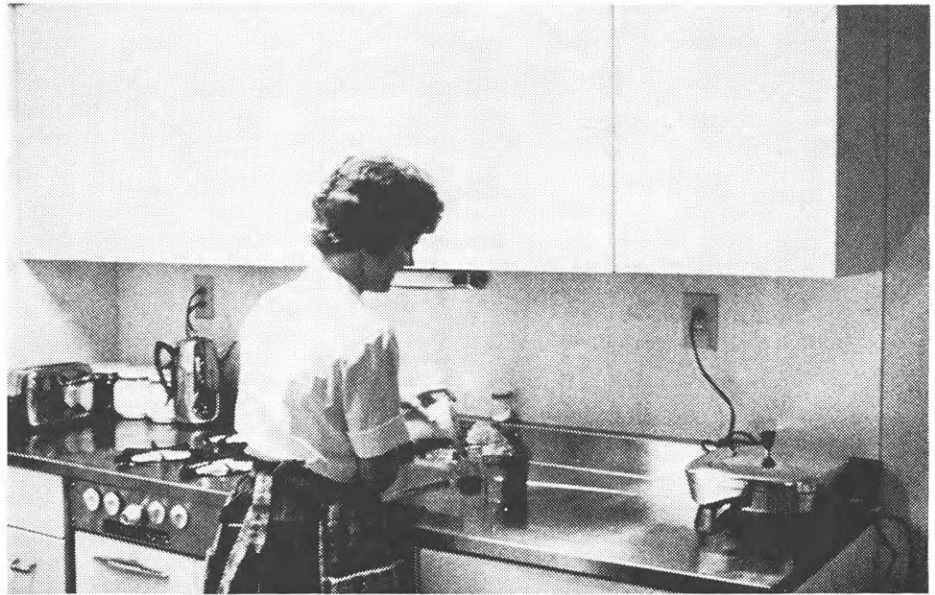
It would be wise for you to plan work surfaces on each side of the sink. A counter about 36 inches long at the right of the sink is usually

adequate for stacking dirty dishes. You may want to place clean dishes on the other side. At other times both of these counter areas may be used in preparing fruits and vegetables.

The cooking area should be designed close to the mixing and sink centers, and convenient to the dining area. Often the problem of getting food served while it is hot is solved by eating in the kitchen. All members of your family may not eat breakfast at the same time; therefore, it is easier for you if there is an eating area in the kitchen. Much work can be saved if a surface is provided adjacent to the range for setting serving dishes.

It is a good idea to have a hood over the range to rid your kitchen of smoke, fumes, and cooking odors. A hood also keeps smoke and grease from accumulating on the walls of your kitchen.

The arrangement of the equipment into work centers in any kitchen is affected somewhat by the shape of the kitchen and the location of the windows and doors. You'll get the best use of available space in a rec-



**You'll get the best use out of available space if you plan for a rectangular kitchen. But when it's necessary to save on space, authorities will recommend a wall kitchen.**

tangular kitchen. The equipment of a rectangular or square kitchen may be arranged in a U-plan, an L-plan, a two wall or corridor plan, or a one-wall plan. The most economical, step-saving, and efficient plan is the U-shaped kitchen. In this plan three walls are left clear for equipment.

Authorities advise to plan a wall kitchen only when it's necessary to save on space.

#### Use Table on Wheels

If the kitchen isn't well organized, you may find it advantageous to use a table on wheels. As a wife and homemaker you can save many steps by gathering equipment and supplies at one area and wheeling them to their point of use. These wheel tables may serve in your kitchen as an extended work surface.

The number of wall openings in

your kitchen limits the amount of space for placing equipment. Try to have a limit of two doors in your kitchen, preferably at one end of the room. Plan your kitchen to avoid heavy traffic through the kitchen work area. Corridor kitchens are the very worst in this respect since an entrance at each end of the kitchen runs the traffic route through the work centers.

Base cabinets in an efficient kitchen should not be more than 24 inches deep and wall cabinets not more than 12 inches deep. This permits ease in getting to equipment and supplies.

The mix center, which would ideally be located between the refrigerator and sink, should be at least 36 inches long. The desired length is usually between 48 and 60 inches long. The average height is 36 inches,

(Continued on Page 15)

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# Careful Hog Handling Improves Ham Quality

by Donald Haberer

**"P**ROPER care of swine before slaughter will usually prove beneficial to the farmer who does his own slaughtering or has the animal slaughtered at a custom slaughtering plant," stated Dr. J. L. Hall, professor of chemistry at Kansas State university. Doctor Hall assisted in a recent study which showed that meat quality can be affected by treatment the animal receives prior to slaughter.

In tests conducted in January and May, heavy hogs were given a 50 mile truck ride with as little walking as possible. The amount of walking was kept to a minimum as a means of comparison to results of previous studies in Great Britain, where hogs were walked as much as one-fourth mile.

There were four groups in each K-State test. One group was rested two hours with no feed, another two hours with feed, another 16 hours with no feed, and the last group was rested 16 hours with feed. Corn was fed to the hogs in the lots which received feed before slaughter.

## Hams Cured in Brine

The hams in all tests were cured in a brine mixture of eight pounds of salt, three pounds of sugar, and three ounces of potassium nitrate in six gallons of water for each 100 pounds of ham. Curing time was two and one-half days for each pound of ham, based on the average ham weight, in coolers at 36 to 38 degrees Fahrenheit. Two weeks prior to the end of the full brine period, a right or left ham from each pair was selected, removed from the brine, rinsed, and hung in the cooler to drain. These

were the unsmoked hams. The remaining hams were smoked at completion of full brine cure.

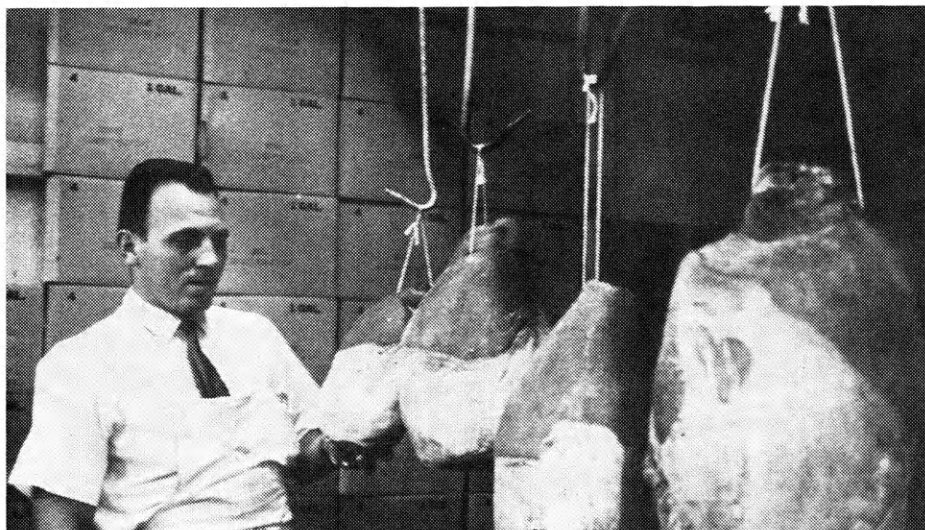
Cooking and palatability tests were made on the shank end of the ham, and chemical analysis and physical measurements were made on the butt end of the ham. Chemical tests included vitamin analysis, chloride concentration, and pH determination. An experienced panel scored the samples on flavor, tenderness, and juiciness.

The pig is a single stomached animal and becomes hungry soon after eating. Hunger induces utilization of glycogen from the muscles and liver almost immediately. This means that glycogen will not be present in sufficient quantities in the tissue to form adequate amounts of lactic acid which lowers the pH index. A low pH index (strong acid concentration) chemically causes a better penetration of brine than does a high pH index. So, hams from hogs which have had feed plus rest before slaughter score better than those without.

"Although these tests showed some variation due to season of the year, much can be said for conservative handling of hogs prior to slaughter," emphasized Doctor Hall.

Operators of custom slaughtering services and farmers can take several measures to improve ham quality. Holding pens should be located close to the slaughter house to limit walking before slaughter. No more than three hogs should be kept in a single pen because of the tendency of strange animals to fight. Finally, a light feeding should be provided to prevent the hog from becoming hungry before slaughtering.

**You will realize flavorful and juicy cuts of pork, if before butchering, the hogs had proper care. A light feeding and limited exercise before slaughter improves quality.**





## 'Kitchen Blues'

(Continued from Page 13)

but this will vary depending on your height.

Vertical storage for such things as baking pans, cookie sheets, and cooling racks is advocated if you wish to store them in high or low areas of the cabinet. You'll be able to reach them with less effort when stored in this manner.

Kitchen cabinets with two opposite sides opening, one side accessible to the kitchen and the other side accessible to the dining room, are convenient and step-saving.

When planning a kitchen it is most important for you to allow adequate space for canned food storage and infrequently used cooking utensils.

The size of kitchen desired in your home varies with the number of persons in the family, amount of space available, and amount and kind of entertaining done in your home. The kitchen should be large enough to permit persons to pass easily between stationary or built-in equipment. If

there are young children in your home it is wise to allow space for them to work with you in the kitchen.

Whatever size and shape kitchen you plan, analyze your work load and plan for a minimum energy expenditure before you undertake permanent arrangements or extensive remodeling.

You'll save much time and energy if the kitchen is planned with easy access to the front entrance, service area of the house, dining room, and rest area.

### Make Work Area Durable

Floors, walls, work counters, and surfaces of storage closets in the home should be of materials and finishes easy to clean and easy to keep clean. Rubber tile flooring is beautiful, resilient, and keeps its finish well, but it tends to be slippery and expensive. Other commonly used materials are asphalt and ceramic tiles, and linoleum.

For the walls you'd probably prefer a splashback of washable material of a permanent nature which

requires no upkeep, such as ceramic or asphalt base tiles, formica, or wall linoleum. Regardless of the material used, variegated or marbled patterns require less care than plain colors.

Materials recommended for counters are those which resist acid stains, withstand heat, and at the same time are easily cleaned. These include Monel metal, stainless steel, acid-resisting porcelain enamel, tile, linoleum, processed pressed wood, and oiled maple.

General illumination plus local lighting directly above each work center will facilitate your work, reduce fatigue, and eliminate some of the causes of accidents in the kitchen. Recommended values of illumination for kitchens are 10 foot-candles for general illumination and 40 foot-candles for local lighting.

With these suggestions, your ideas, and some dreams, you'll have a kitchen to be proud of. You'll be happy because your work will be easier and more enjoyable, and you'll have more time to spend with the family.

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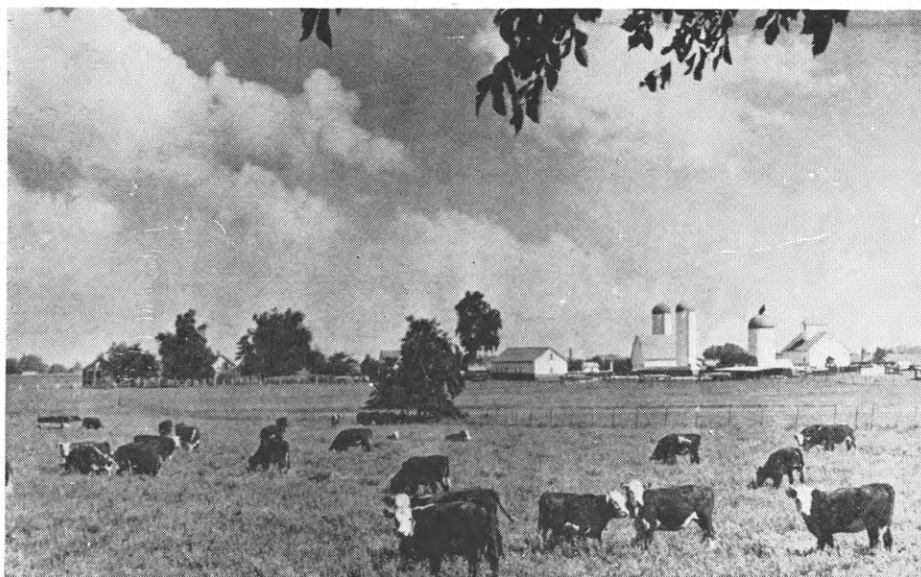
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## Farm Credit

# Does It Meet the Demand?

To operate tomorrow's farm you must be able to borrow money when you need it.



The profit margin on livestock is smaller today than in past years. This means each farmer must handle more head to realize the same profit. So, he needs more credit.

by *Herschel Pickett*

**W**ITH THE tremendous expansion in agriculture has come an equally tremendous demand for agricultural credit. Gone is the day of the belief that a farmer should pay off all his debts and start with a clean slate each year. In fact, in the modern day use of credit, most farmers cannot hope to ever be completely out of debt. He is continually borrowing to expand as well as to pay off old debts.

A large increase in the use of continuous credit has helped reduce the

pressure of capital requirements, but it has also placed increased demands on the farmer and credit agency. The farmer must keep more complete and accurate records. He must plan ahead estimating his yields and income so he will be able to meet the payments as they come due.

Why has there been such an increase in the demand for more credit? There are several reasons: 1. Farming is a seasonal operation with a slow turnover and a high risk. 2. Marketing of farm products is seasonal. 3. Farms are increasing in size. 4. The farm operation cost is increasing.

The advanced technology in agriculture requires large investments in motor vehicles, farm equipment, fertilizers, and chemicals. This has caused some of those who serve agriculture to take a new look at our "horse and buggy" methods of lending.

If the present trend continues, the number of farms in 1970 will be less than two-thirds of the farms in 1940. Today, the farmer makes up only eight percent of the total population. The lenders say that farmers are entering into a new kind of agriculture which will destroy many farmers' dreams of living on a little farm well tilled. The alert farmer who can make the present changes and who will continue to change can look forward to better profits.

### **Land Is Limiting Factor**

For new farmers land plus capital are the limiting factors. This is to say that if land is available for sale, money will become available. The farm expansion trend has been so great that farm beginning opportunities have been scarce. A continuation of the expansion trend will create a demand for more long term credit than is now needed. Some commercial farms have incorporated to provide a permanent debt structure which they, the farmers themselves, never expect to see retired in a lifetime.

Another future credit possibility is contract farming or vertical integration. This increases the scale of operations and raises the level of management by bringing in professional management. Under this plan, the farmers will be better informed, more alert, and will be able to adopt

cost-saving techniques at a faster rate. But this also speeds the trend towards increased specialization and larger and fewer farm units. This form of integration has not been tried on a large scale yet because of the farmer's fear of losing control of the management.

### Cost Can Be Lowered

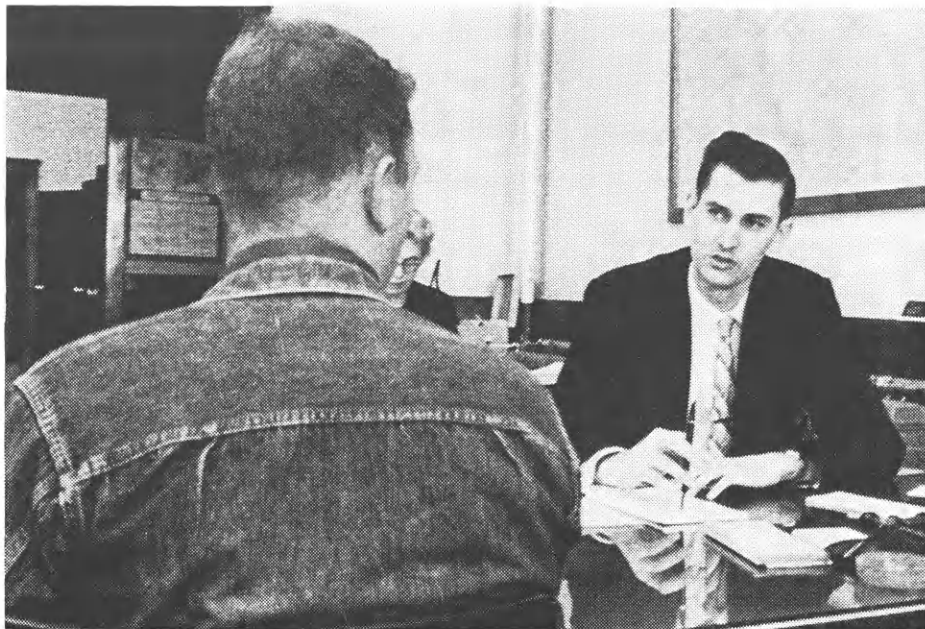
One other possibility of obtaining credit is specification lending by the banks. Specification lending requires the farm to be considered as a single unit of operation. This will give the farmer access to credit which will use the farm estate as the basic collateral in supporting the loan. This type lending by banks to farmers could reduce the cost of credit to the farmer.

In short, it appears that the modern trend will be permanent debt, contract farming, and specialized farm products plus renting and direct government loans to obtain farm capital.

But even then, farmers will borrow only the amount from these sources that they cannot obtain from private credit agencies. Farmers are afraid to use the other sources of credit because they don't want to lose their right to manage.

### Average Farm Income Is Low

Even with the increase in the use of credit there is little chance that the farm income will improve mark-



Some banks have added an agricultural specialist to their staff to cope with farmers' credit problems. This staff specialist helps the farmer plan his expansion program.

edly. At the present time, average per-capita farm income is roughly one-half that earned by comparable people in other industries. Incomes in agriculture are also more varied and unstable than in other industries.

The average return per capita invested is lower for agriculture than for other industries. There are individual farmers who have a high return for the capital invested. All farmers are going to have to show that they have the management ability to obtain a high return from

capital invested to get adequate credit.

Many banks are wondering if they can furnish adequate credit for the farmers. Most have added an agriculture specialist to their staff. The farmer needs assurance from a bank that his loan will be renewed so he can plan his expansion program. It is going to be a challenge for the lending agencies to provide adequate credit to the farmer of the future without jeopardizing the farmers position or the agencies position.

**Capital investment in modern equipment like this is tremendous. To meet these demands for capital, the farmer must receive help**

**in acquiring credit to meet his demands. Two solutions to this problem are contract farming and a permanent debt structure.**





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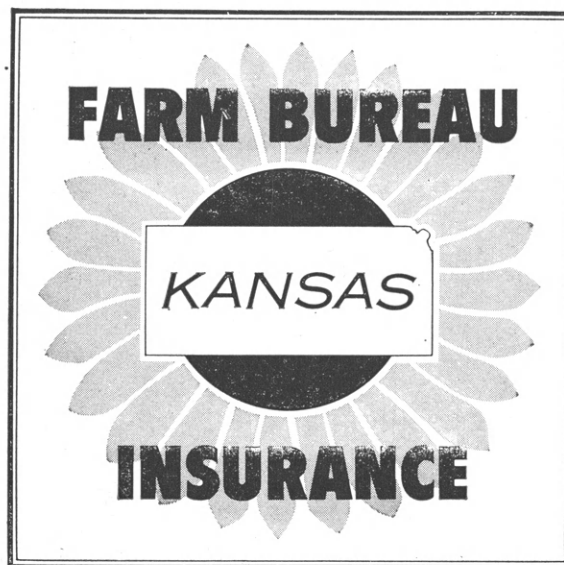
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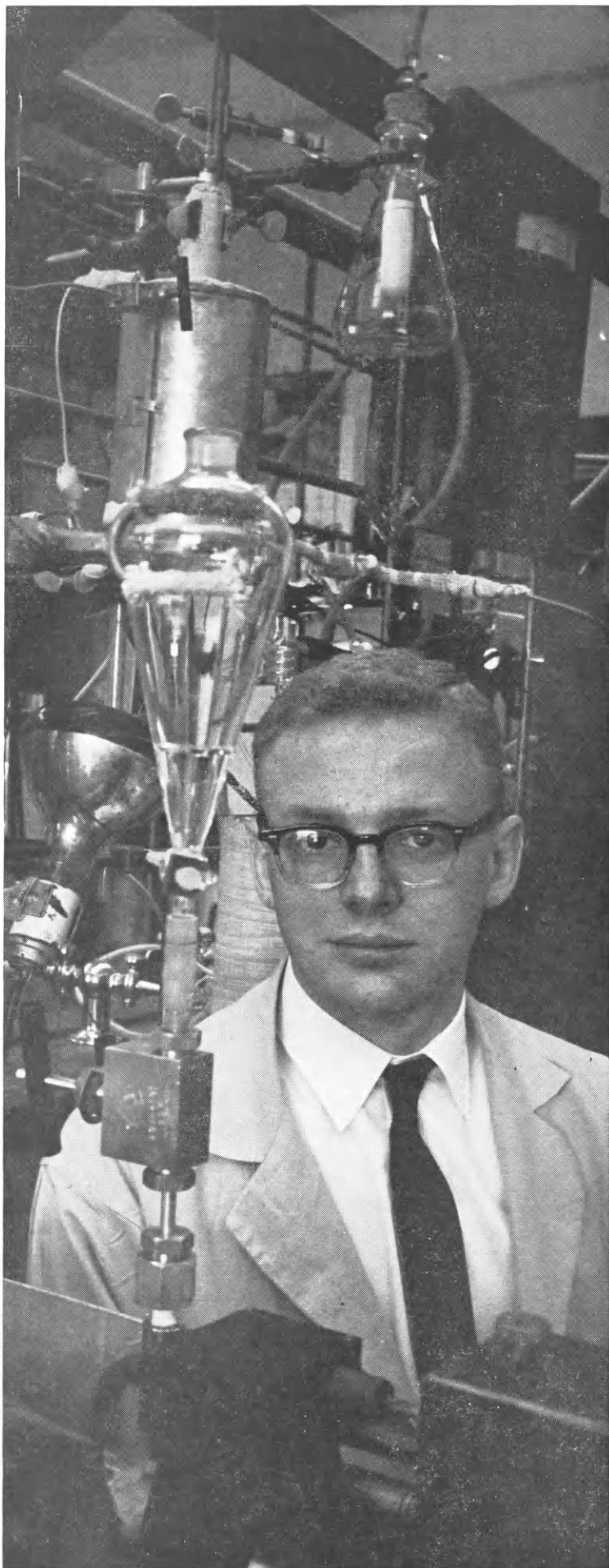
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about a career*

*at American Oil*

*by Roger Fisher*

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Roger Fisher, B.Ch.E. from Cornell and Ph.D. candidate from Princeton is one of many young scientists and engineers at American Oil shaping the future for himself, his Company and the industry. At 26, he has earned a Fulbright Scholarship and will take a year's leave of absence to continue his graduate research on solids mixing at the University of Osaka, Japan.

"American Oil is looking for broad-gauge research people," Roger adds. "In the long run, the Company benefits as well as the professional who continues to grow in his own or in several fields of research."

Roger's present assignment at American Oil involves applied research—to plan, design, build and operate bench scale lab equipment, to study the kinetics of catalytic cracking. His is one of many diversified projects at American Oil Company. Chemists, chemical engineers, physicists, mathematicians and metallurgists can find interesting and important work in their own fields.

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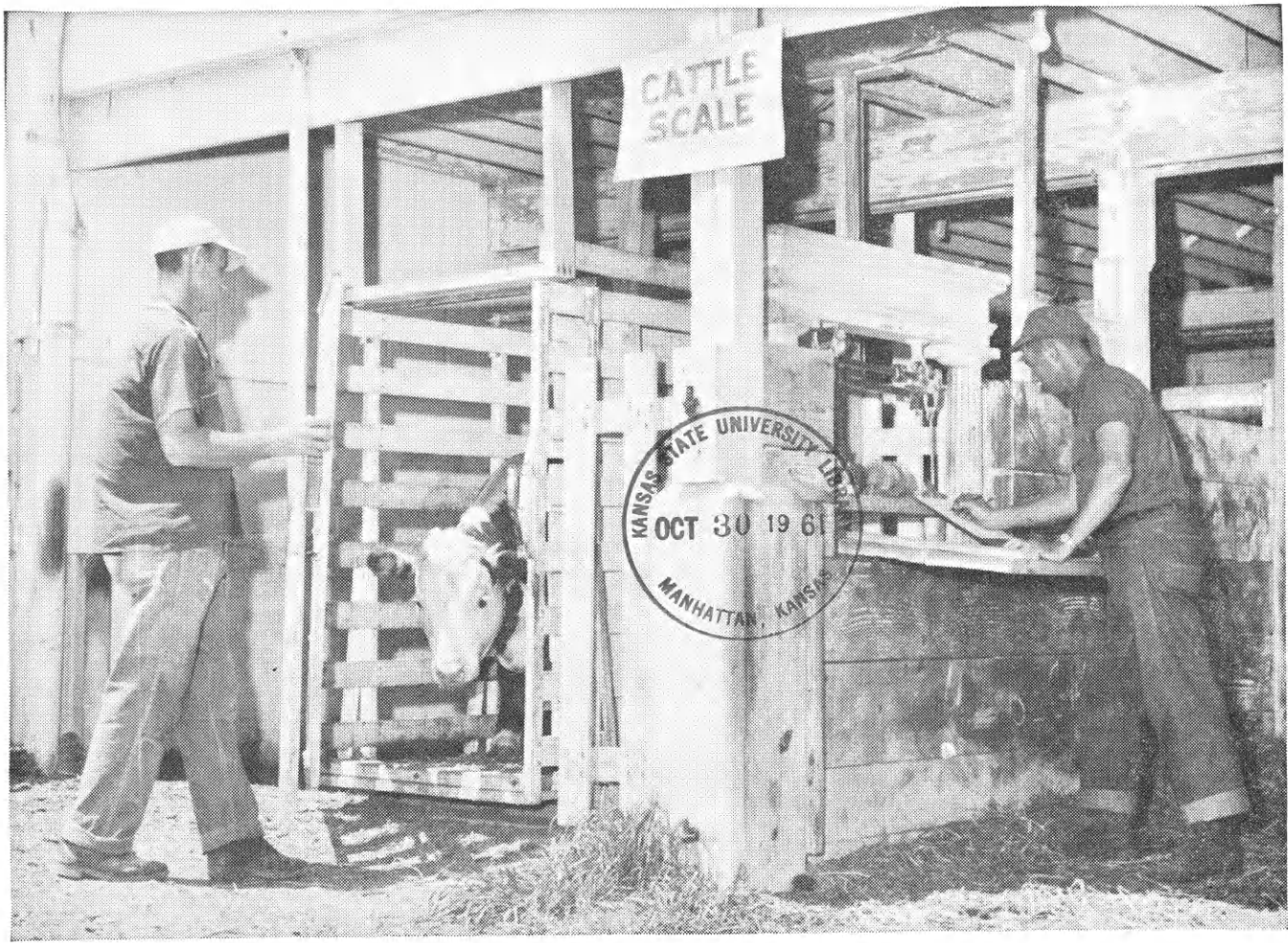
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