KANSAS STATE UNIVERSITY

Ag Student

DECEMBER 1959

Christmas is a thousand things.

It's a winter's night, and an angel song . . . a giant star, and a tiny stable . . . a manger, and straw, and swaddling clothes.

Christmas is a chime . . . a boy soprano, and *Silent Night* . . . carolers, and *The First Noel* . . . the tinkle of a bell on a sleigh, of a coin in a cup.

Christmas is Dickens, and Scrooge, and Tiny Tim. It's holly on the door, a candle in the window . . . the scent of pine, and the sparkle of tinsel.

Christmas is red and green, and blue and silver. Christmas is white.

Christmas is cards, and ribbon, and tissue paper. It's a trip home, an open latch, and a handclasp. It's giblets, and biscuits . . . cranberries, and mince-meat pie.

Christmas is cold and warmth . . . forgiveness, and a smile.

Christmas is a *prayer* . . . a renewed plea for an ancient hope . . . *For Peace on Earth, Good Will Toward Men.*

Kansas State University

AG STUDENT

Vol. XXXVI December 1959 No. 2

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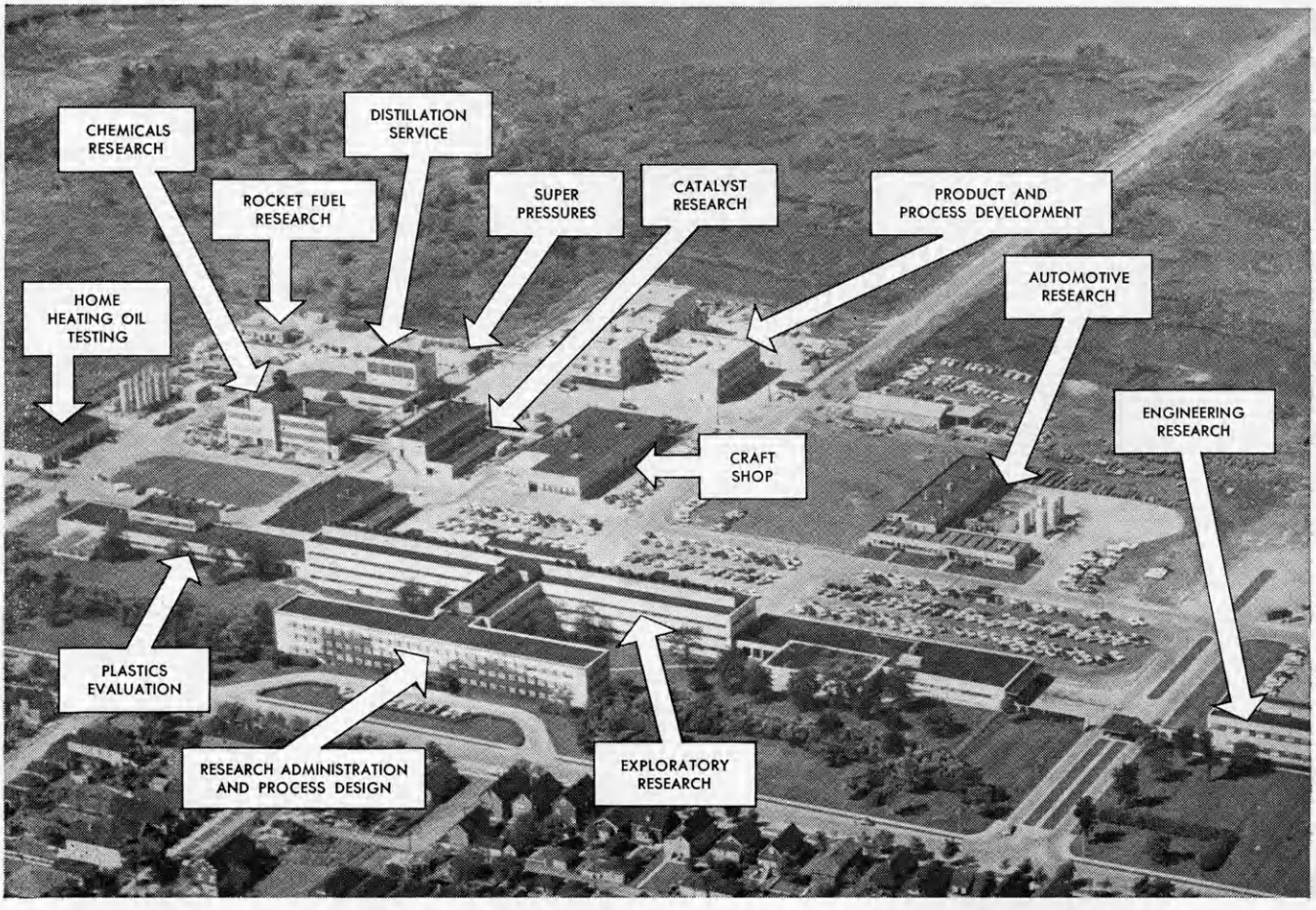

This huge research center at Whiting, Indiana, is only part of Standard Oil's research facilities. A recently completed technical service and quality control laboratory, not shown here, is the largest laboratory of its kind in the country. In addition, large research laboratories are operated by several affiliates.

Where the fuels of the future are born!

From time to time, we are asked if gasoline and oil today really are better than they were five or ten years ago. People can't see the difference, smell it, or feel it.

The answer is an emphatic yes. And this aerial view of Standard Oil's research center at Whiting, Indiana, is graphic evidence of the extensive research work that goes on behind the scenes day in and day out.

Thousands of research experts—chemists, engineers, and technicians—work together in Standard's modern laboratories, improving present fuels and lubricants and developing new ones for cars that will not be a reality until about 1965! Rocket fuels, too, are being developed. Standard's development of clean-burning, highly-reliable solid fuels has been a real contribution to America's missile program.

Since our first research laboratory opened 69 years ago, research scientists of Standard Oil and its affiliated companies have been responsible for many major petroleum advances —from making a barrel of oil yield more gasoline to discovering a way to revive almost-dry wells. Each process had the effect of adding billions of barrels to America's oil reserves.

At Standard Oil, scientists have an opportunity to work on a wide variety of challenging projects. That is one reason why so many young men have chosen to build satisfying careers with Standard Oil.

STANDARD OIL COMPANY

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STANDARD

THE SIGN OF PROGRESS...
THROUGH RESEARCH

Keep Your 'Safety' On

by Laurice Margheim

WHETHER you're using your gun to shoot a thievin' coyote that's been getting a fat hen every night or to hunt for sport only, you must follow the Ten Commandments of Gun Safety if your hunt is to have the safe, happy end it should have.

1. Treat every gun with the respect due a loaded gun.

This is the cardinal rule of gun safety. It's the "empty" gun that usually kills. "I didn't know the gun was loaded" is no excuse for an accident.

2. Keep only empty guns in your car, camp, and home.

When you put a loaded gun in your car you're not only inviting accident, you're also violating a law.

3. Always be sure the barrel and action are clear of obstructions.

After you stumble, check your gun barrel carefully before firing again. Even more important, before you put a 12-gauge shell into your shotgun, be sure there isn't a 20-gauge shell already in the barrel!

Besides ruining your shotgun, this'd probably fill you and your hunting companions uncomfortably full of shrapnel.

This is a bird to be proud of! Don't let an unnecessary accident ruin your hunt.

4. Always carry your gun so you can control the muzzle direction, even if you stumble. Keep the safety on until you're ready to shoot.

If you haven't time to flip the safety off *after* you flush game, you haven't time to aim anyway.

5. Be sure of your target before you squeeze your trigger.

6. Never point a gun at anything you don't intend to kill.

Guns are made to destroy life! You are the power that determines what your gun will kill! It's hard to imagine a man being mistaken for a moose with antlers, yet this has happened when someone shot first and looked later.

7. Never leave your gun unattended unless you unload it.

This rule is necessary because there're too many people who don't respect Rule 1. Loaded guns left unattended are especially dangerous to children.

8. Never climb a tree or fence with a loaded gun.

Where'll that muzzle be pointing about the time you're half-way into a belly landing because that top wire broke when you climbed on it?

Will it be aimed at your head, your companion's back, or at your neighbor's prize bull?

9. Never shoot at a flat, hard surface or the surface of water.

A bullet is dangerous enough, but it's infinitely more dangerous after it glances off a hard surface completely out of control and flattens to several times its original size.

10. Don't mix gunpowder and alcohol.

A gun is no safer than the man controlling it. If a man doesn't have full control of his senses, he naturally can't have full control over his gun. There's no more place for the drinking hunter than for the drinking driver.

Remember the success of a hunt isn't measured by the number of shots you fire. Be a safe sportsman and stick around to enjoy another year of hunting!

It Pays To Increase Your AG POWER

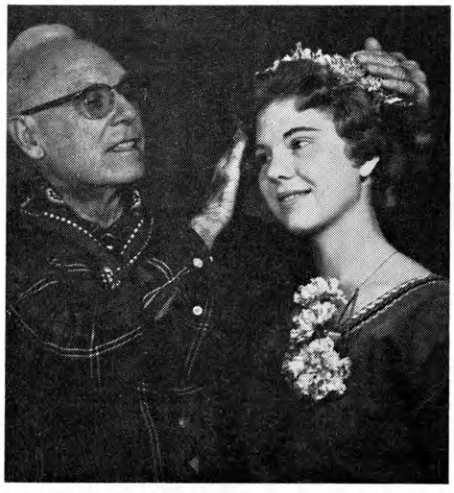
by John Carlin

Each right answer is worth 20 points. A score of 100 is an A, 80 earns a B, 60 rates a C, 40 squeaks narrowly by with a D, and a score of 20 or less would earn no grade points at K-State.

Correct answers are on page 22.

1. Meat consumption per capita each year since 1900 has: *a.* Increased sharply. *b.* Made moderate changes. *c.* Decreased slowly.
2. A wheat sample containing 12.5 percent protein would be: *a.* Low in protein. *b.* Intermediate. *c.* High in protein.
3. Main loss from wheat smut comes from: *a.* Reduction in yield. *b.* Lowering of quality. *c.* Increased cost of processing.
4. Which of the following fertilizers is most practical for Kansas? *a.* 0-15-20. *b.* 15-12-20. *c.* 15-15-0.
5. The best type of irrigation for rough, porous Kansas soil is: *a.* Flooding. *b.* Sprinkling. *c.* Sub-irrigation.

Queen Colleen Reigns Over Ag Barnwarmer



Asst. Dean C. W. Mullen crowns the 1959 Ag School Queen, Miss Colleen Ungeheuer, during intermission of the Ag Barnwarmer.

by Chester Peterson Jr.

Immediately after she was crowned Queen of the Ag School at this fall's Ag Barnwarmer, Colleen Ungeheuer was "auctioned off" to the highest bidder. After much spirited bidding, Dick Janssen, her date, finally "bought" her for $21. In return for his money Dick had the honor of escorting Queen Colleen for an evening of dining and dancing.

Colleen is a freshman in music. Her attendants were Marilyn McCord, Karol Durham, Floy Baldwin, and Rosie Wineinger.

This was just one of the many highlights of this year's Ag Barnwarmer and the events leading up to it.

Seventeen queen candidates were introduced to Aggies at Ag Seminar. So the fellows could get to know the girls a bit better before casting their votes, Don Mach, acting as emcee, asked each candidate several pertinent questions.

Queen Candidates Quizzed

First, he asked something serious such as, "How would you prepare your daughter for life in the future?" Then, after the girl had answered it, he'd ask something like, "Why do farm girls from good families generally wear slacks?" (Answer—because they're well-reared.)

Chore Night, an annual promotion stunt, was held at the Animal Industries building October 6. A crowd of 250 watched as five queen finalists struggled to impress the onlookers.

"Chores" included saddling and riding a horse, driving a tractor, catching a lamb, calling hogs, catching a chicken, and milking a mighty unappreciative cow.

Decorations for the October 9 Barnwarmer in Nichols Gym were western style. The coronation throne was fashioned from straw bales. Approximately 160 couples danced to the music of Mack Sanders and his Ranch Boys, according to Mach.

Apple cider and doughnuts were served during the dance at a refreshment bar.

Plans are already being made to make next year's Barnwarmer even better.

One idea is to have Aggies take goats to their dates' houses the night of the dance. There they'll demand the girls either kiss them and go to the dance or kiss a reluctant goat and stay home. Sounds like fun, doesn't it?

If society decides a flood control dam is needed in the valley, this farmer will have to move out.

Society Has a Stake In Your Farm

by Laurice Margheim

DO YOU KNOW what ownership rights go with your farm? "Of course," you reply, "I have a deed recorded in the courthouse that shows everyone this land is mine to use, or not to use, as I see fit!"

But, society, through government, has certain rights in all land. These are public rights. All others are private rights divided among individuals.

There are four public rights affecting all land in the United States. They are the right of escheat, eminent domain, police power, and taxation power.

You can't take your property with you to the grave. If you die without any heirs eligible to inherit your property it reverts to the state through the right of escheat.

Eminent domain is the power to take private land for public use. Our Federal constitution requires that private land taken for public use must be obtained through "due process of law," and then only with "just compensation."

The land necessary to build new superhighways and large flood control dams is usually obtained through the right of eminent domain. Society, through government, may decide part of your farm is necessary for a new road.

Your only alternatives are to accept the price the government offers you, or take the matter to court.

The court will decide what's a fair price for your land and may allow you more or less than the original offer. But, either way, it's final.

You probably place a high value on some things that just can't be bought with money. No matter how much money you receive for your farm, you can't buy another farm, anywhere, that has the same sentimental value to you the old homestead has.

Can't Put Pricetag on View

An overpass right across your front yard may ruin the view through your living room window, but it's difficult to place a dollar value on such damages.

If only a part of your farm is taken, your fields may be left in odd shapes separated by a strip of highway just fifty yards wide. But it may take you five miles of detouring to get around to the other side of the road!

You can collect damages for having your fields split up, but you'll probably still cuss the road every time you have to drive five miles to cross its modest fifty yards.

Having had a part of your farm taken over by the process of eminent domain once doesn't mean it can't happen to you again. One Kansas farmer had to move because a large dam was being built on his farm. He bought another farm and now a new highway is going across his farm.

Progress can come only through changes. Sometimes individuals have to give a little to make our country a better place in which to live.

In many countries the government simply takes the land it needs and the displaced farmer has no guarantee of just compensation.

The right of eminent domain can be exercised to obtain easements, too. Power companies and other public utilities commonly lease or buy easements allowing them to construct and maintain power and pipe lines, both above and below ground.

Easements can be purchased, leased,

or obtained by adverse possession and use. Adverse possession and use simply means you have used, openly and without interference from the legal owner, land not legally yours until the law allows you an easement for this use.

Owner Honors All Easements

Roadways across land are often obtained by adverse possession. Remember, easements run with the land and you are bound to honor all easements on any land you buy.

Police powers are broad and harder to define than other public powers. They can include almost anything if it's for the health, safety, or welfare of society.

They include controls on a large variety of property rights such as zoning, water pollution, rent controls, regulation of oil production, grazing and watershed districts, weed control, and wind erosion control.

Generally you can use or abuse your property any way you want—as long as your action, or lack of action, doesn't endanger other people's property.

During the dusty days of early 1954 a few western Kansas landowners were surprised to find they couldn't let their land blow unhindered onto a neighbor's farm. County commissioners hired other farmers to work the ground and stop it from blowing. When the landowners got over the initial shock of finding out someone else had worked their ground, they found they had to pay for this "service," too.

Kansas law requires county commissioners to investigate any blowing land brought to their attention. Then they must determine what, if anything, can be done to stop or reduce the soil blowing and order such steps to be carried out right away.

If the landowner fails to take immediate action the commissioners must hire someone to work the ground. Landowners are then charged with tillage costs up to one dollar a year for each acre worked.

Land that blows year after year can even be planted to perennial grasses, shrubs, or trees against the owner's will. However, this involves a more complicated process of law than the emergency action authorizing county commissioners to temporarily reduce wind erosion.

Taxation could be the most powerful of all public rights, but it's usually used only for collecting revenue to operate the government. Chief Justice Marshall once observed, "The power to tax is the power to destroy."

Inheritance and estate taxes are used to further the break-up of large estates, but taxes have never been used much to regulate land use in the United States.

Property rights can be divided into three layers of rights—air rights, surface rights, and subsurface rights. Each of these layers can legally be held separate from the other rights.

The courts have held that landowners have exclusive rights to all airspace above their land they can occupy and use. By an act of Congress, navigable airspace in the United States is subject to regulation and control by the Civil Aeronautics Authority. Airports often obtain easements which prevent construction of hazards to low-flying airplanes.

Airspace Rulings New

Farmers have collected damages from airlines when a low-flying plane frightened their chickens. Since airspace problems are relatively new it's sometimes hard to predict exactly how courts will rule in cases involving disputes over air rights.

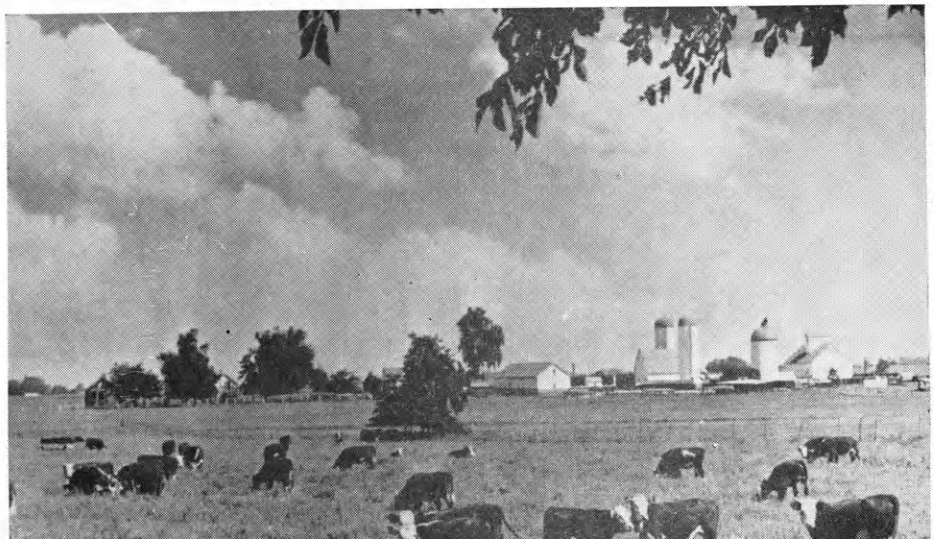
Subsurface rights can be separated from surface rights by sale, lease, or deed reservation. Whoever owns the subsurface rights can make explorations, sink shafts, and build roads necessary to get to and from the mine or well site on your land.

In turn, you have a right to continued support of your land and to damage payments for loss of income due to reduction of tillable acreage and damage to growing crops.

You should know what rights you generally have. When you aren't sure about what you can or can't do with your property it'll probably pay you to consult an attorney or reputable real estate agent. The important thing is to know enough about your rights to realize when you have a problem so you can take care of it before it's too late.

After oil is struck on your land it's too late to start wishing you had the mineral rights you failed to check on before you bought the land.

Beautiful setup, isn't it? How would it look with a super-highway running through it? Besides decreasing the acreage, a road through a farm unit creates many new problems.



Harvest More With Hybrid Sorghum

by Karen Peterson

HYBRID grain sorghums are in Kansas to stay! This year farmers planted hybrid varieties on a full two-thirds of their total sorghum acreage—almost twice as much as last year, according to the Kansas Crop and Livestock Reporting Service.

The rise in popularity of hybrid grain sorghums has been rapid. In 1957 they represented only 11½ percent of the total grain sorghum acreage. In 1958 they jumped to 47 percent, and this year to approximately 75 percent.

"Last year was the first time there was enough hybrid sorghum seed available to make it easy to obtain," explains Prof. A. L. Clapp of the K-State agronomy department.

Hybrid corn represented only five percent of the total corn acreage in 1939, three years after it was introduced.

Sorghum has replaced corn in recent years as the leading feed grain crop in Kansas. Sorghum is about the only crop adapted to the state as a whole that can replace wheat, now a surplus commodity. It can be used to feed livestock, and the demand for meat is continually rising.

The change to sorghum started in northeast Kansas during the dry years of the middle 1950's. Farmers there, already familiar with the advantages of hybrid corn, were quick to adopt hybrid sorghum varieties. They planted four-fifths of their sorghum land to hybrids this year.

Hybrid sorghums didn't catch on as fast in the important southwest area of the state. But, this year these farmers planted close to three-fourths of their sorghum acres to hybrids.

Northwest area farmers have been the slowest to adopt hybrid sorghums. They've planted them on only about half their sorghum land this year.

What's behind the big switch to hybrids? The main factor is their high yield.

Hybrids Usually Outyield Standard Varieties

Last year, test plots were harvested by K-State agronomists in five counties throughout the state. Three standard varieties adapted to Kansas growing conditions, and up to 42 experimental and commercial hybrids were planted in each case. The open-pollinated varieties were the popular Westland, Midland, and Martin.

Averaging the five counties together, the hybrids outproduced the standard varieties by 16 bushels an acre.

There are some disadvantages to hybrid grain sorghums. They don't stand up as well as the best standard variety (Westland) does, according to Professor Clapp. If you have a grain dryer, however, you can harvest a hybrid crop before lodging occurs.

Hybrid seed costs about twice as much as non-hybrid seed, says Agronomy professor A. J. Casady, but the cost per acre is still so small it doesn't make much difference.

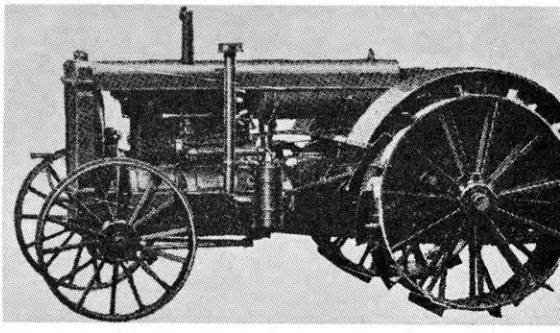
You can't raise your own replacement seed with hybrids. The seed you plant must be the result of a cross between a male-sterile plant and a normal plant. If you plant the seed from your hybrid crop it won't breed true. This is due to the genetic process of segregation. You'd get a wide range of results, notably a lack of uniformity in size of plant and color of grain.

Hybrid forage sorghums aren't too popular. This is because forage hybrids haven't proved to be much better than the best of the open-pollinated varieties, and still the seed costs more.

Hybrid sorghum is now doing for the Great Plains states what hybrid corn has done for the Corn Belt. Higher yields have made hybrids increasingly popular on Kansas farms.

The Big Farm Tractor Evolves

by Arnold Good



This steel monster of 1939 vintage is a far cry from today's modern farm tractor.

MORE POWER and versatility per pound is the story of our 4-5 plow tractors of today as compared to those built 20 years ago.

In 1939, a 4-5 plow tractor weighed in at 6,900 pounds to as high as 9,900 pounds. Most had steel wheels and didn't carry wheel weights. The engines on these huge machines had such a long stroke the crankshaft looked like the handle of a cream separator. They turned over at a modest 1,000 to 1,100 revolutions per minute.

Most of them were equipped with a belt pulley and, as for other equipment, they had none. On these large tractors electrical starting just wasn't to be had.

By 1949 the 4-5 plow tractor had trimmed down to 5,800 to 6,800 pounds. All were rubber-tired, unless specially ordered otherwise. Surprisingly, rubber tires usually account for approximately 600 more pounds than steel wheels.

Engine revolutions per minute were stepped up 400 to 500 r.p.m.'s and all were electrically started. Most tractors had a road gear that put their top speed at 13 miles an hour, in contrast to the four miles an hour top speed of 1939 models.

In 1959 the 4-5 plow tractor had evolved down to 4,800 to 5,800 pounds, and the top revolution per minute level was up to 2,200 r.p.m.'s. These modern tractors have as equipment: power steering, power shift rear wheels, three-point hitch systems, and many other improvements designed to make a day's work easier.

In 1939 a tractor could do little more than pull implements or run a belt. But now it does a variety of jobs. Some tasks are: dig post holes, operate power loaders, power many assorted hydraulic implements and tools, provide electrical power through a mounted generator, and a number of other things that could make a foot-long list.

While these new tractors aren't perfect, they are a few steps closer to what you need to meet the nation's demands from agriculture.

Save a Veterinary Bill

Dehorn Your O

by Neil Dowlin

THE EASIEST way to remove horns from your calves is to mate your cows to a true-breeding polled bull," says Dr. Edward F. Smith, assistant professor of animal husbandry at K-State. However, since polled dairy bulls are rare, and there aren't enough good-quality polled beef bulls to go around, we must dehorn some of our cattle by other methods.

Horned cattle take up more feed bunk room. They can cause injury to other cattle, too. Animals in a load of commercial cattle can easily be bruised or cut by horns while being hauled to market. An injured carcass is worth less to the packer-buyer, so he may cut his price as much as two dollars a hundredweight.

"Best time to dehorn is before your calves are seven days old," advises Dr. Edward R. Frank, professor of surgery and medicine at the K-State veterinary hospital. Horn buttons aren't attached to the calf's skull at this age, so they're easily removed.

When dehorning with a hot iron, you can obtain best results if you work on your calves before they are one week of age.

The purpose of dehorning is to kill or remove horn-producing cells at the base of the horn. This often requires taking one-fourth of an inch or more of the skin that grows around the horn with the horn when it's removed.

You can use any of several dehorning methods, depending on the animal's age. These methods include cutting the horn out with a dehorning spoon, applying caustic paste to the horn button, placing an electric dehorning iron over the button, lifting the horn out with a dehorning gouge, and cutting the horn off with a saw.

Early Horn Removal Best

Caustic paste, the electric iron, and the dehorning spoon can be used from three days to three weeks of age, but you'll get better results when using them during the calf's first seven days.

For each of these methods you'll need to clip hair around the horn buttons so they can be seen at all times during the operation. The clipped area should be about the size of a quarter. You can do this with hand shears or regular scissors (if your wife doesn't catch you using them).

If you're a beginner, spread a ring of vaseline around the button before applying liquid caustic. This prevents acid from running down the calf's head and causing serious burns.

If you use stick caustic, don't forget to wrap the caustic stick with paper to prevent it from burning your hand. After moistening the caustic stick in a cup of water *(don't use your tongue or finger)*, rub the horn button lightly with the stick until the skin-covering is broken and a little blood shows.

A solid holding chute is a must when you have to dehorn larger cattle with a saw.

Leave your calves in individual stalls for several hours to prevent other cattle from licking the caustic off before it dries.

Caustic Sold in Three Forms

In a few days the horns will drop off and hair will grow over the area. Caustic is also sold in liquid and paste forms. Be sure to read directions before using any form.

Electric dehorning irons are used because they reduce fly hazards brought on by bleeding. It's generally less painful than any of the other methods.

Electric dehorning irons use 110-

wn Cattle

volt current and reach 900 to 1,000° F. when dehorning. When your iron is hot, place it against the calf's head and over the horn button. Apply a little pressure and rotate the handle.

Heat until the horn base is copper-colored, then remove the outer skin of the horn. Continue to burn within the branded circle until it also turns copper color. It's best if you inspect the horn often because excessive heat will burn too much skin.

Dehorning Spoon Used on Calves

You can use a dehorning spoon on calves three to five months old. The spoon looks much like a small tablespoon, with a sharp front edge for cutting skin. This sharp edge is used to cut the horn loose from surrounding skin tissue. After you do this, work the spoon under the horn and lift it out.

An instrument known as the Barnes dehorner is used to dehorn cattle over five months old, when the horns are attached to the calf's skull. The Barnes dehorner crushes blood vessels so there is little loss of blood.

When dehorning cattle five months old or older, you need to take at least one-fourth of an inch or more of the skin growing around the horn base with the removed horn. This is to completely remove any horn-producing tissue.

Whether or not to use a saw or clipper is often a controversial point among cattlemen.

However, there seems to be little danger of the dehorning saw being thrown out the barn window. Some advantages of sawing off horns, you'll find, are that you can direct the cut to the exact spot you desire, less blood is lost because the saw-blade tears the blood vessels rather than producing a clean cross-section, and there is no danger of crushing the horn.

Some farmers dehorn show cattle with a saw because they can shape the animal's head better with this method.

Clippers do the dehorning job faster for you, the wound is more regular and therefore heals quicker, and it causes less pain.

Probably the biggest disadvantage of the clipper is that it's less satisfactory for mature, brittle horns. Another thing against the clipper is that regrowth of horns is common when removed by this method.

It's recommended that you don't attempt to dehorn in summer or late fall, because of the fly and insect problem.

When you remove the horn it exposes a sinus opening that's an ideal lodging place for germs and foreign matter. A wad of cotton or milk strainer pads can be placed in this opening. "This opening may be up to two inches in diameter in mature bulls," Dr. Frank points out.

Occasionally excessive bleeding will cause a steer or cow to become faint and weak. To prevent this, Dr. Frank recommends that you pull the blood vessels with long-nosed pliers or artery forceps. Locate and grasp the vessels firmly, then pull them out until they break off.

Prof. Edward Smith warns there is danger of excessive blood loss if your herd has been on sweet clover pasture or sweet clover hay before dehorning. Clover contains a substance that prevents blood clotting.

Dehorn in Spring or Fall

After dehorning, exposure to cold, driving rain or extreme cold weather can cause serious reactions. For this reason you should plan to dehorn in the early spring or late fall when flies and weather conditions will give you the least trouble.

Dairy bulls are generally dehorned at 12 to 18 months of age. If they learn to use their horns before taking them off they're not as likely to become mean. "It's a psychological loss to the bull," says Dr. E. F. Bartley, professor of dairy husbandry at K-State.

Cows in milk are sometimes given tranquilizers or nerve blocks to prevent some of the shock that can cause a production slump after dehorning.

Looks calm, doesn't he? Last week he trapped his owner in a corner. Cutting his horns off can make him more docile, easier to handle, and much safer.

PLASTIC— Modern Black Magic

by Larry Ihrig

YOU MAY cover your silo or hay stacks with polyethylene plastic film. But, in addition to these simple and commonplace jobs, you can find many ways in which to make this tough plastic help you do a better job of farming.

This material, which can be purchased from your local lumberyard or implement dealer, is both durable and inexpensive.

You may have an irrigation well on your farm. But, because your soil is too porous, your ditches lose a considerable amount of water. Instead of changing to a more expensive channeling system you can use a polyethylene film 4 mils (a mil equals .001 inch) thick to line your ditches and prevent this seepage loss.

Keeps Grain Dry

Use of this plastic film as a vapor barrier has been developed to prevent soil moisture from moving up through concrete floors of grain-storage buildings and causing spoilage. Just spread the plastic on the floor and then put the grain directly on top of it.

During the past year polyethylene film has proven satisfactory as a poultry house at K-State. The Poultry Farm building is 24 by 24 feet and is constructed of "pump rod." Its frame is covered with laminated polyethylene film that cost only 43 cents a square foot.

The plastic film is 6 mils thick with a white outside layer to reflect the sun's rays. The inner layer is black.

Manufacturers of this material guarantee it to last three years. If you're just starting in the poultry business, remember polyethylene film can be used to provide an inexpensive and satisfactory poultry house.

If someone in your family likes to work in the garden raising vegetables or flowers as a hobby, he'd probably enjoy having a year-'round small greenhouse. Using clear polyethylene film, you could easily build one at a fraction of a regular greenhouse's cost.

Plastic can also be used structurally for economical garage construction. Maybe you could use just such a structure to protect your pickup, tractor, and farm implements this winter. This same building could also be used for storing sorghum or other grains until permanent storage is found.

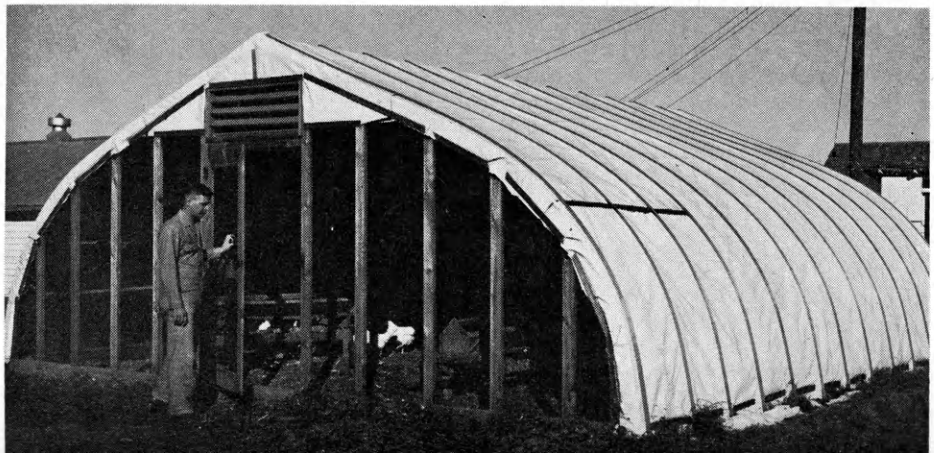
Store Machinery Under Plastic

Polyethylene film can also be used on your farm to store machinery without bothering to construct a frame to support the plastic material.

Do you happen to be one of the lucky farmers with a swimming pool in your back yard? By placing a plastic film structure over your pool you can keep the pool cleaner. Also, you can use it earlier in the spring and later in the fall. Some pool owners manage to inflate this plastic for even more protection.

Surely some of these polyethylene film uses can be applied to your farm. Once you begin using it you'll find many secondary uses such as a fresh concrete cover or as a painter's drop cloth.

Byron F. Miller, poultry graduate student, inspects the plastic-covered poultry house constructed by Ray Morrison of the poultry department. Cost: $1.20 per bird housed.



Pour Your Walls and

Tilt 'em Up

by Arnold Good

AT ONE TIME or another you've probably considered using concrete as a building material. No doubt you decided against concrete because of its cost and all the trouble of building forms.

These problems partially solved are two of the big reasons for the recent development of tilt-up concrete construction.

The name of this construction technique gives a hint to its main feature, and how it differs from regular concrete construction. You can pour wall panels for buildings, silos, or windbreaks on the ground or floor and then tilt them up into position.

This method of construction isn't new. In fact, it's been used for years to construct warehouses, large shallow grain storage bins, and other single-story buildings. Recently it has been adapted to agricultural construction and tested at most of the leading agricultural experiment stations.

The transition from commercial to farm building construction has involved only a few simple changes. Main change was the reduction of panel thickness and the shrinking of dimensions so panels could be handled by farm equipment.

Tilt-up Construction Practical and Economical

Research shows that tilt-up concrete construction is a practical and economical way to build single-story farm buildings such as cattle sheds, machine sheds, and loose housing dairy barns.

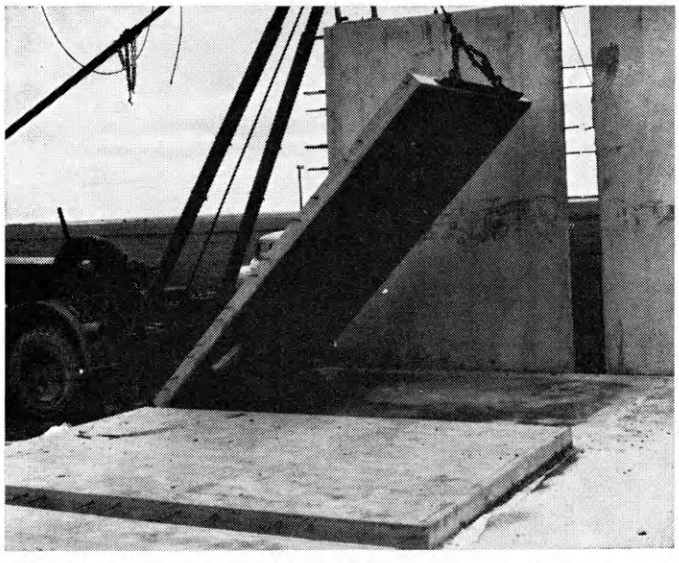
Research was started to find a method practical for small crews using farm implements. Actual cost records of this method were kept and then the completed structures were tested.

Now, let's assume you want to build an open-front machinery shed.

If you want a cement floor, pour the floor and let it set. Footings for the foundation can be supplied by using concrete piers under the corners of the wall panels. Piers are an inexpensive way to put the foundation support below the frost line. Reinforcing steel used in these piers should stick up far enough to strengthen the columns that'll support the wall panels.

After the floor has set, build your forms for the tilt-up panels on the floor. Coat the forms and the concrete floor inside the forms with form oil.

Place the amount of reinforcing steel you want in the forms and pour them. After the panels are cured, tilt them into place, brace them, and pour the supporting columns.



Most farms have the equipment necessary to construct durable concrete single-story farm structures by the tilt-up method.

There are a variety of different features and designs you can use. One of the more interesting ones is to use bolts and steel plates to fasten the panels together so they can be dismantled later on.

The tilt-up method was used to build a large bunker-type silo at the Fort Hays experiment station. The panels were tilted into position and braced while a bulldozer pushed dirt up against the sides to form a mound that effectively braced the sides from the outside.

Many Possibilities with Single-story Structures

"As long as you don't build any higher than a single-story structure, the only thing that limits you is your pocketbook and imagination," says Keller Cordon, a field representative for the Portland Cement Association.

A structure with three-inch-thick panels costs about two dollars for each square foot of floor space.

Unless you've seen the tilt-up construction procedure used, or have some expert guidance, it'd probably be wise to have a professional builder construct your first building.

Advice on tilt-up construction can be obtained from the Portland Cement Association or through your local extension agent.

If you're thinking about building a single-story farm building consider "tilting 'em up."

It's Christmas All Over the World

by Mary Jo Mauler

AMERICANS are once again preparing to celebrate the joyous season of Christmas. It brings many bright lights, gleaming faces, and packages decorated with huge bows to exchange with friends and family.

People in other countries have different ways of celebrating their Christmas season.

Japan is not a Christian nation. Only about one-tenth of one percent of her people celebrate Christmas. Even so, Christmas trees, decorations, gifts, and greeting cards appear in quantity in the shopping streets of the cities. Merchants there are ready, as they are all around the world, to profit by the occasion.

On Christmas eve, everyone decorates a Christmas tree. Around the base, gifts for the family are piled. About dawn on Christmas day, groups of young children go around to all the homes to sing in Japanese, Christmas carols such as *O Come, All Ye Faithful; Hark! the Herald Angels Sing; O Little Town of Bethlehem.*

Guests Get Large Meal

Quite often families will have guests for breakfast. After an enormous meal, the traditional distribution of presents follows. The group then sets out for the Quaker meeting at the meeting house.

Following the inflexible Japanese custom, everyone leaves his or her shoes at the door when entering. All of the worshippers sit in silence in concentric circles. The message of Christmas, its meaning, and the fruits of the spirit—love, joy, and peace—are heard by the group.

After the prayer hour, the people stay for a lunch and program. Lunch consists of cold rice with bits of fish or chicken and pickles, steaming green tea served in small cups without handles, platters of crisp rice cakes, mandarin oranges, and Christmas candy.

New Leaf Turned Over

New Year's day is Japan's big holiday. Then all the debts are paid, houses are cleaned, everything shabby is renewed or replaced, the slate is washed clean, and everyone is a year older all at once. Life begins afresh with special feasting and games.

Christmas in Jordan—Palestine in Christ's time—provides a time of reunion for many of the Christian Arabs allowed to come into the country for the celebration.

The high point of the celebration is the religious service in Bethlehem on Christmas eve. It begins at noon with a procession of the Latin Patriarch from Jerusalem. He is met at Rachel's tomb by representatives of the cities of Bethlehem and Beit Jala, who are escorted by musicians and mounted police.

They join in the procession to Manger square in front of the Church of the Nativity. There they are met by clergy and the mayor of Bethlehem. The procession then passes to the Church of St. Catherine, where vespers are conducted at 2 p.m.

The Shepherds' Field fellowship carol service is held at 4:30, followed by the traditional zarb (mutton feast). At 9 p.m. the Archbishop presides over the carol service sponsored by the Anglican Community in the Church of the Nativity courtyard.

People who have tickets go to the Roman Church of St. Catherine where at 10:30 p.m., a ceremony preceding the midnight mass takes place. From midnight until 1:30 a.m., the high mass with all of its brilliant color is celebrated. There is much singing and the towering candelabra hold huge decorated candles.

The remainder of Christmas day, families spend in large reunions.

Festivities Start with Breakfast

In India, Christmas celebrations begin with the Indian Breakfast at 11 a.m. Breakfast will consist of piles of snow-white rice, dishes of delicious ruhoo (Indian carp), fish of half-a-dozen kinds, omelettes, meat cutlets, and mutton chops.

Other delicacies include spicy stews made from the breast of wild duck, "deviled bones," a variety of curries, chutneys, and sauces. The menu concludes with rich Chinese and Indian preserves, tea, coffee, and light French wines.

In the evening Christmas dinner is served. It includes a vast array of dishes and foods. After dinner, people enjoy singing, dancing, and well-got-up charades.

In India there is no Santa Claus, Christmas tree, or exchange of gifts.

Over the Director's Desk

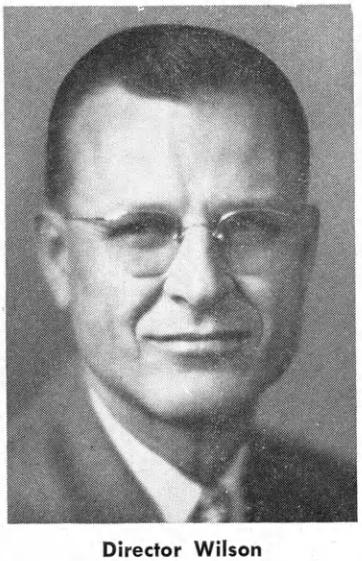
By C. Peairs Wilson

Director of the School of Agriculture

WE ARE ALL familiar with figures such as these: In 1803 one farm worker produced enough food and fiber for himself and three others, but today one farm worker produces enough for himself and 23 workers.

But how many of us are aware of the tremendous increases in efficiency in just the last few years? Big city newspapers and magazines have been telling us of the efficiency of industry, of the increased output per man hour, and how automation is saving man hours per unit of production.

But how many people know that farm output for each man hour during the last 6 years increased 42 percent — twice as much as in manufacturing and three times as much as in all the non-farm sector of the economy.



Director Wilson

No, the big city newspapers and magazines haven't told us much about the dynamic increases in farming efficiency. These same newspapers and magazines see in the present farm situation only a big story on the sizeable number of dollars the Federal Government has tied up in the farm program.

They appeal to the average city dweller who knows his taxes are too high. *They miss the real story in the farm picture which is the tremendous contribution that American Agriculture has made to the economic progress of the nation!*

Economic progress can be defined as the ability of a nation to produce basic necessities of life with a smaller and smaller proportion of its manpower, thereby releasing a larger and larger proportion of its manpower for the production of the comforts and luxuries of life.

The efficiency of our agriculture has made it possible for our large-scale industry to develop.

Dean Weber recently said, "Those who take food for granted and make snide remarks about farmers forget that few other people in the world can indulge in such extravagances."

Increasing efficiency in agriculture is where every underdeveloped nation in the world has failed. Any nation that must devote most of its manpower to the production of the bare necessities of life cannot have a high standard of living.

In my opinion, Premier Khrushchev was more impressed with the efficiency of our agriculture than with any other one thing.

Khrushchev was able to brag about the accomplishments of his nation in such fields as space science, satellites, missiles, and atomic energy. But he didn't brag about the accomplishments of their agriculture after he visited Beltsville and Iowa.

Industry Needs Productive Agriculture

He's shrewd enough to know he can't match our standard of living until he can develop an efficient agriculture. His boast that he will "smother us in the USSR's output of industrial goods" is an idle boast as long as 50 percent of his manpower is tied to the land.

Yet there are those in this country who don't appreciate the fact that it's America's productive agriculture that has made it possible for us to have productive industry. And, it is productive agriculture and industry that has made America strong.

If we don't maintain our agricultural superiority—and by a wide margin—our industrial superiority can't continue. That's why it is so terribly important that the general public knows the contribution that agriculture has made and is making.

For the most part the critics of agriculture haven't aimed their barbs directly at our research and educational programs in agriculture. But, indirectly our programs are being affected.

Is Your Soil Depreciating?

Watch out for nutrient loss, erosion, and leaching.

by Richard Vanderlip

THE SOIL on your farm may not be as fertile as it was when you started farming! Your soil may have deteriorated more than you think!

As soon as soil is formed from parent rock it begins to deteriorate by losing plant nutrients by leaching. When man started tilling the soil he increased the rate at which its productivity declined.

Each year nearly one-half million acres in the country become useless for cultivation. *It's often been said there are but six inches of topsoil between the human race and starvation.* This really doesn't leave us much margin to live on.

Gully Erosion Removes Soil

First, let's see how our soil deteriorates. Most spectacular, perhaps, is gully erosion. Huge quantities of soil are removed, leaving ugly gashes in our fields.

Other types of erosion may not make themselves so evident. Wind, rill, and sheet erosion usually aren't so obvious. We can't readily see wind and sheet erosion until countless tons of soil have been removed. Rills are small gullies.

To determine the amount of topsoil your fields have lost, pick a spot in an adjoining fence row or native pasture. Then you can use a soil probe or spade to compare the depth of topsoil there with the topsoil in your field.

Soil loss isn't the only way soils can deteriorate. Each time water moves through your soil it takes nutrients with it. This is called leaching. Cultivation has little effect on leaching.

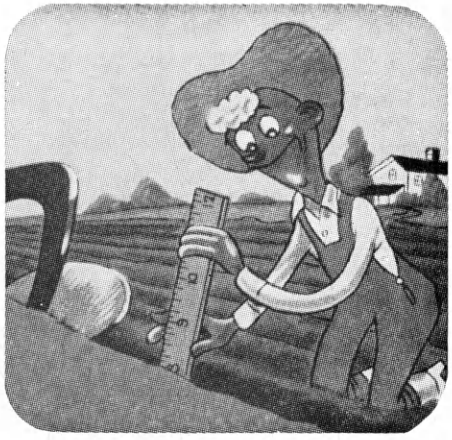
Cultivation Influences Soil

Soil physical properties are greatly influenced by cultivation, however. Soils are most porous and permeable when under native vegetation. Porosity is the amount of air space between soil particles. Permeability is the ability of water to move through your soil.

When you cultivate your fields organic matter is destroyed and the size and number of pore spaces are decreased. This makes it more difficult for water to penetrate to the root zone. As a result, a given amount of rain won't do as much good to a packed soil as to a porous, permeable soil.

When a method of stopping soil deterioration is mentioned, probably you automatically think of soil conservation. Terraces and waterways are the best known "tools" of soil conservation.

However, just because you have a good terrace system on your farm doesn't mean you can assume you've completely stopped soil deterioration.



"Not much topsoil left." How many people realize how vital these few inches are?

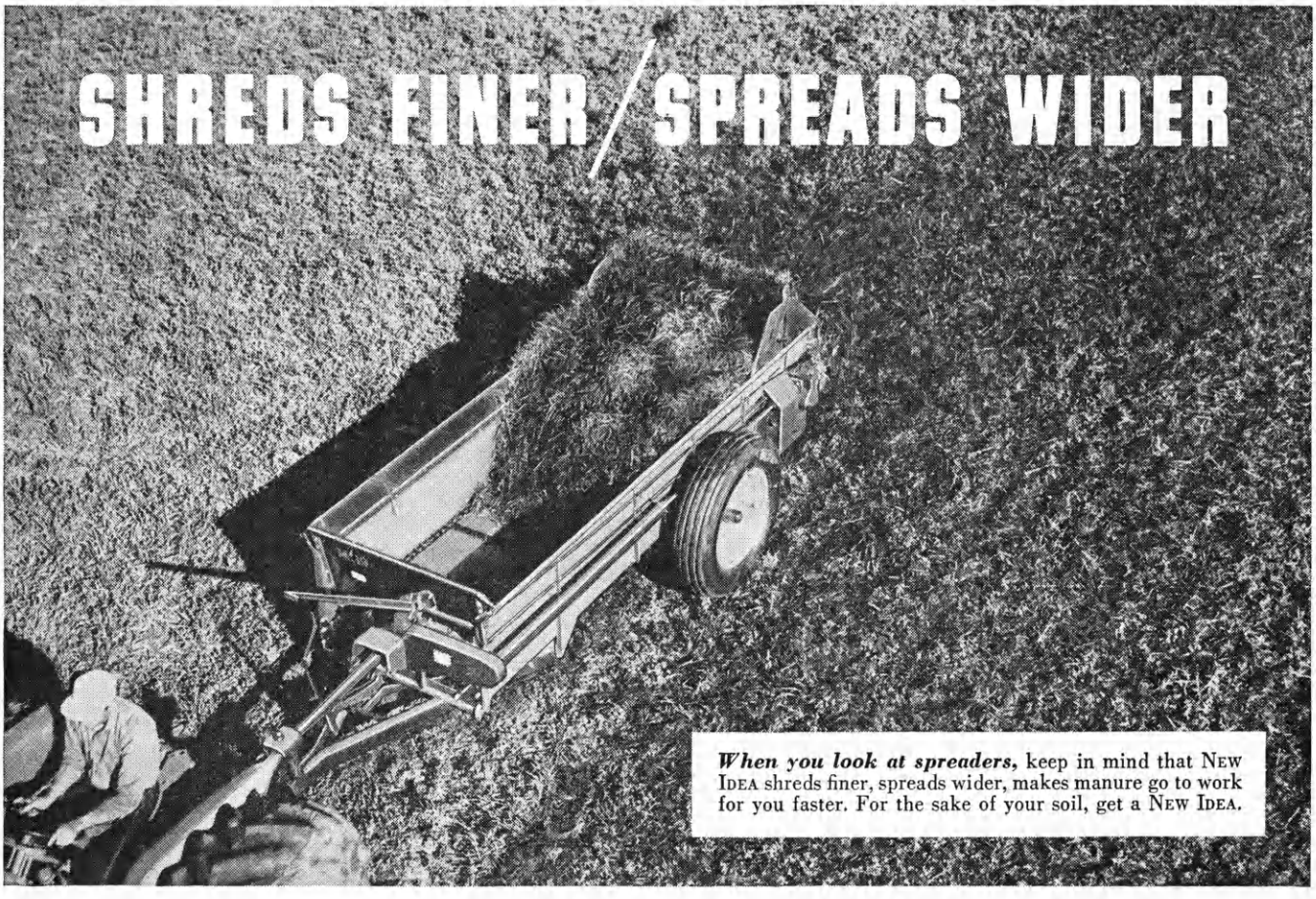
Terraces should be supplemented with good, sound soil management practices.

Remember, even if you have just about stopped soil loss, nutrients are still being both leached from the soil and used by crops. For maximum yields you may find it necessary to fertilize your crops. The correct amount to apply you can determine by soil tests and by checking your state experiment station's recommendations.

Add Organic Material

Permeability and porosity can be maintained if you add organic material to your soil. This can be in the form of plant residues, manure, or growing plants with large root systems.

George Washington in 1797 declared, "A half, a third, or even a fourth of what we now mangle, if well-wrought and properly dressed, would produce more than the whole under our present system of management."



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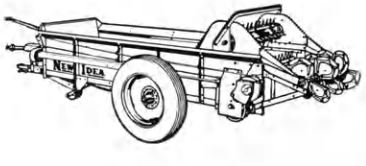

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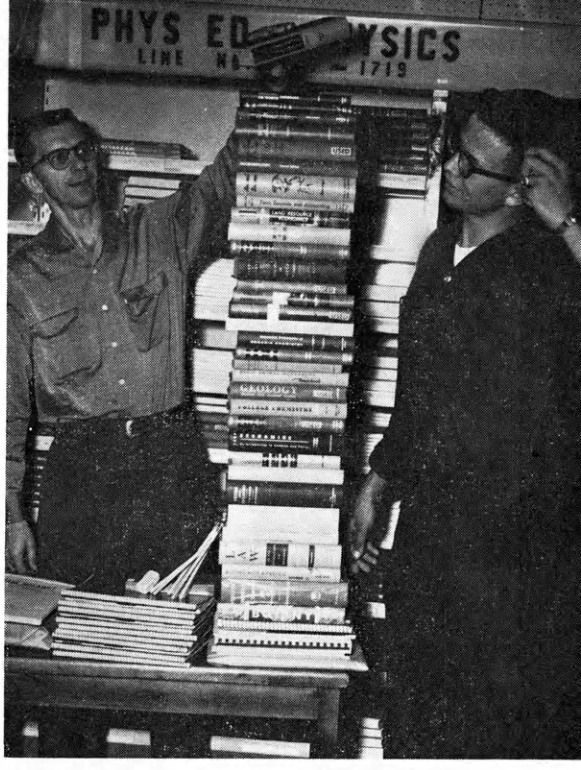
In the Aggies' World



A local bookstore manager adds the last book to the stack Ted Zielke, Agriculture freshman, will need to get his BS degree.

Ag Student Judged Best in Nation

The magazine you're now reading is the best agricultural college magazine in the country.

At the Agricultural College Magazines, Associated, convention in Chicago November 26-28, the K-State Ag Student almost made a clean sweep of the awards. The Ag Student won first in general excellence, articles of interest to women, popular presentation of technical material, and placed second in covers.

Those representing the magazine at Chicago were Chester Peterson Jr., editor; Karen Peterson, home ec editor; Laurice Margheim, assistant editor; and Fred Beeler, business manager.

Livestock Team Places

The senior livestock judging team, coached by Dr. Don Good, placed 16th among 23 teams in an intercollegiate contest at the American Royal.

Best showing of the team was in hogs where K-State finished second as Gary Cromwell tied for second in this part of the contest.

Jim Lonker was sixth high individual in judging beef cattle, and Larry Laverentz was ninth high man in sheep judging.

Meats Team Wins at Royal

K-State student meat judgers won the 18-team American Royal intercollegiate contest in Kansas City.

Coached by Dr. R. A. Merkel, they were first in lamb grading and pork judging, second in beef grading, fifth in lamb judging, and 12th in beef judging.

Deloran Allen and Ron Janasek tied for second high honors in the entire contest, while Robert Lewis was 12th high individual. Allen also had a first in lamb judging, and Lewis was third in pork judging and fourth in lamb grading.

Wool Team Takes Second

Coached by Carl Menzies, the wool judging team placed second to Texas A&M in the American Royal contest.

For K-State, David Slyter finished as second high man and placed fourth in both judging breed fleeces and in grading fleeces. Deloran Allen was fifth high individual and second in fleece grading. The third member of the team, Jim Houck, was third in commercial fleeces and fifth in grading fleeces.

An Aggie, about to have a tooth pulled, was so terrified at the prospect the sympathetic dentist offered him a shot of joy juice to calm his nerves. That seemed to he'p so he gulped down still another.

"Feel any braver?"

"Do I feel any braver?" snarled the Aggie. "I'd like to see anybody try to mess with my teeth now."

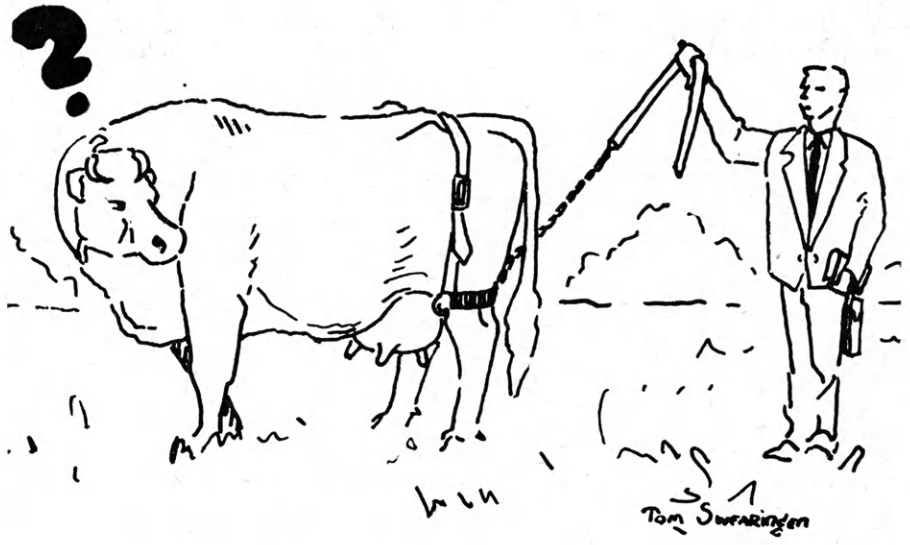
The two traveling bopsters, while in Russia, saw a man being flogged in the public square.

"Man, like I don't dig the beat," said one, "but that sure is a crazy drum."

The Aggie had just missed the train back to schoo!. As he stood on the platform, his arm around his girl, he watched the rising column of smoke curl backwards from the engine as the train disappeared into the distance. "Honey," he said sadly, "now we're both in trouble."

Judge: "Are you the defendant in this case?"

Rastus: "No suh, I'se got a lawyer to do my defendin'. I'se de gent'man what stole de chickens."



"But, they told me I could do anything with my EE degree!"

"Jack darling," said the Hollywood bride, entering her new home with her husband, "this house certainly looks familiar. Are you sure we haven't been married before?"

Definition: Tired Santa Claus—Beatnik.

There are only three reasons why girls wear sweaters. One, it keeps them warm. The other two are obvious.

Asked the old question, "If you were marooned on a desert island, what would you like to have for reading matter?" a chorus girl unhesitatingly replied, "A tattooed sailor."

First Russian: There can be no doubt but that they were citizens of the Soviet Union. They had nothing to wear, nothing to eat, and yet they were told they were living in paradise.

We love the football season. Aside from its many other blessings it's the only time of year a fellow can walk down the street with a blanket on one arm and a girl on the other without people asking so many damn fool questions.

A couple of Home Ec girls were being followed by a single Aggie. At last one of the girls turned and said, "Either stop trailing us, you wolf, or get another Aggie."

"Man's best possession is a sympathetic wife."—Euripides.

INCREASE YOUR AG POWER

Answers

1. *b*—Made moderate changes.
2. *b*—Intermediate.
3. *a*—Reduction in yield.
4. *c*—15-15-0.
5. *b*—Sprinkling.

A habit of reaching years ahead ..that's Allis-Chalmers research

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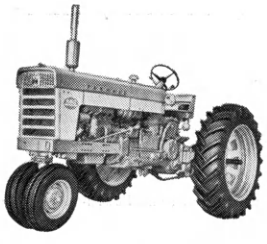

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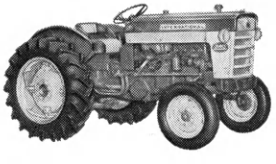

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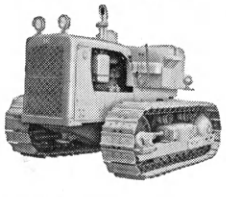

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