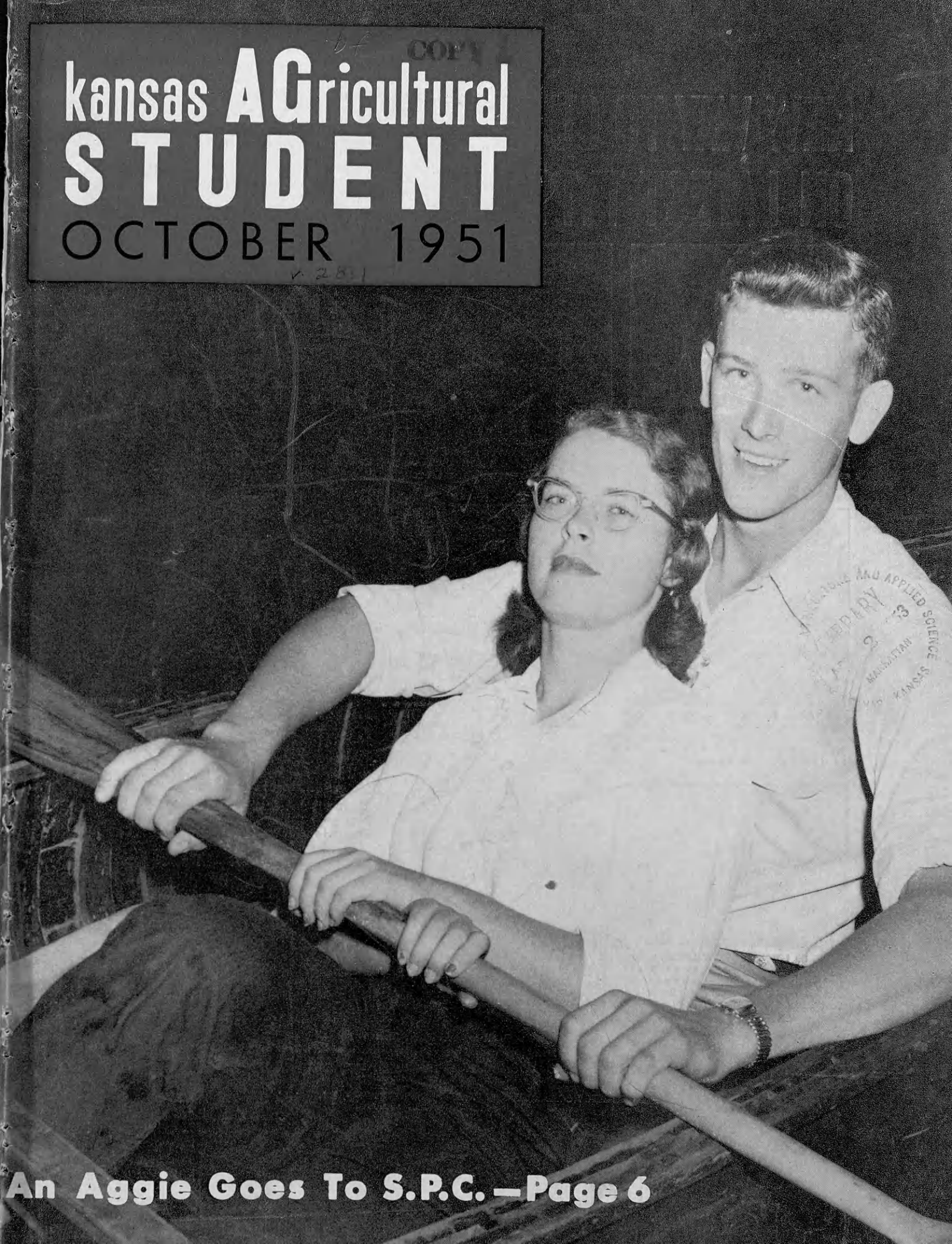
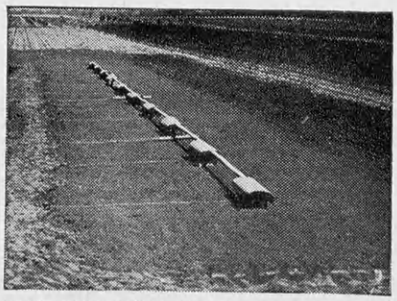
kansas AGricultural STUDENT

OCTOBER 1951

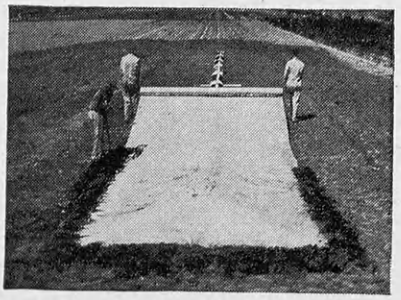


An Aggie Goes To S.P.C.—Page 6

NEW WAY TO CUT LABOR...TIME...COSTS ON LATEST TYPE GAS SOIL FUMIGANTS†



SAVE TIME WITH SIMPLE SUPPORT FOR FUMI-COVER. Potato or apple crates straddled by boards or pipes support Fumi-Cover made of Firestone *Velon* Plastic film. One Fumi-Cover amply covers 100 x 13 foot area. Soil tamped along edges makes excellent seal.



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SOMETHING NEW ON SOIL FUMIGANTS! Tests prove commercial fumigants afford freedom from most weeds so that plant emergence, growth and uniformity of stand is greatly improved. Soil fumigation controls nematodes, kills insects, damping-off organisms and even the sclerotia of Sclerotina Rot. Firestone technicians, working with the Besmar Corporation, developed a new type of fumigation soil cover—Fumi-Cover—made of heavy, 4-gauge Firestone *Velon* vinyl film, heat-sealed for greater coverage.

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† D-D
† Dowfume G
† Dowfume MC-2
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† Pestmaster SF-1

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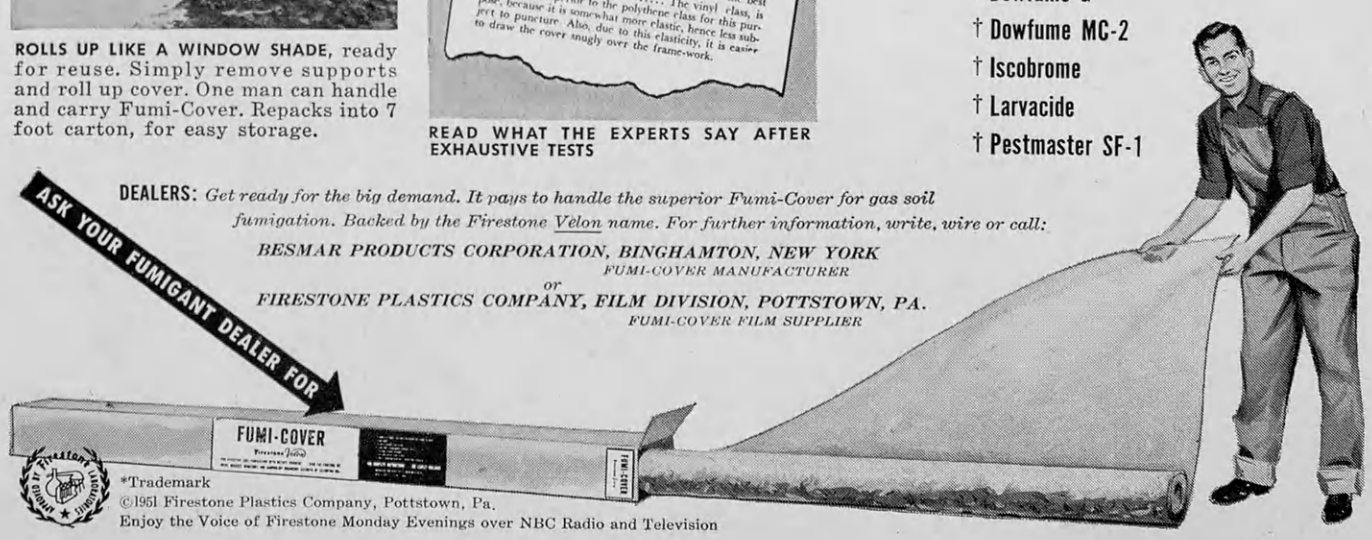

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Grab Your Partner!

SWING HER HIGH — SWING HER LOW

Oct. 13

Nichols Gym

Time, 9 o'clock

Matt Betton's Band

Dancing

Free Cider (100 gals.)

Doughnuts

Intermission Entertainment

to the

BARNWARMER

Let's Go!

Tickets on Sale
OCTOBER 8
East and West Ag

On the Cover...

Llano Thelin, an Ag Administration junior, and Eleanor Wright, a Technical Journalism major, might well remember that old adage of canoeists of yesteryear—"Sit light in the middle of your craft!"

Llano, as one of the Aggies who attended the Student Planning Conference this year at Camp Wood, is the hero of a picture story on page 6. The cover is one of the shots taken at SPC where all the time is not spent in arguing about the better points of school administration.

On the one clear night that the weatherman gave campers this year, Llano and Eleanor, along with as many others as could find canoes, took a midnight drift across the lake. We would like to say it was a moonlight canoe ride, but the truth is that Old Mr. Moon just hadn't come up yet. It was as black as pitch.

Your Ag Student photographer fretted a long time on shore waiting for a canoe to drift in close enough. When his flash bulb exploded, this is what he found. But when he tried to find a canoe and a lass of his own, Alas and Alack! neither were to be found.

Scholarships Available

FLOOD RELIEF scholarships are available to students in all schools at K-State, according to Dean R. I. Throckmorton.

Five scholarships of $200 each will be given. Half will be paid at the beginning of each semester of the coming school year. Awards will be made on basis of recommendations to Dean Throckmorton by the Student Loan Committee, which will determine needs of students who suffered in the flood.

Available to both men and women, the scholarships will be given regardless of curriculum. Funds contributed for relief of those who suffered from the flood have been placed under Dean Throckmorton's administration. Applications should be made to the Student Loan Committee, of which Dean Durland is chairman.

Funds for the scholarships were contributed by a donor in Kansas City who wishes to remain unidentified.

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KANSAS STATE COLLEGE
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MANHATTAN, KANSAS

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Contents

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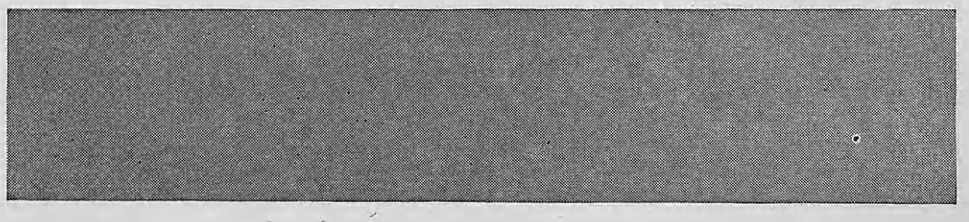


Who Claims

Floods Damage Soil?

By Perry McKinley

MAC, AN OLD-TIME Kaw Valley farmer, had seen that river come up and go down more times than most persons had years. When I mentioned how bad the 1951 flood had been for Kaw Valley soil, he snorted.

"Bosh! Most of that land is better off now than it was before. All this weeping and wailing I've been reading about—stories telling about sand dunes and top soil washed away—why it turns my stomach. There's nothing to it!" Mac declared.

"Things looked as bad as this or worse after the 1903 flood. I can show you sand piles that folks called farms and were trading for $400 to $600 an acre around here—sand that was washed up by other floods. These Johnny-Come-Latelys are scared now and some are trying to sell. But if they'd just hold on, they'd find their land will produce more sweet potatoes or melons than it ever did before."

Mac stomped on to the barnyard gate. "Some ground was washed away, sure, I know." He glared at me. "But the rest of it just got freshened up. They claim it was the most destructive flood ever to hit the Kaw Valley. Maybe so. But it was towns and factories and railroads that got hit most, not the soil."

He swung his arm up to point to a field of corn spreading out across the flats. Water covered that three feet deep but he'd still get a crop. The current had been over on the other side and not much of his corn went down. Some fields which had been directly in the current were swept clean. He claimed these were the fields that made the big headlines, though there were relatively few of them.

Mac's statements were exactly the opposite of most of the talk I had encountered up and down the valley—so much so that I checked with soil scientists at Kansas State.

C. Harry Atkinson, associate professor of soils here, and W. A. Badgley, USDA soil specialist, estimated 80 to 90 per cent of the severely flooded land will produce better crops in the future because of the 1951 flood. Only about 10 to 20 per cent of the flooded land is damaged.

The two soils experts have been surveying the north side of the Kansas river from Lawrence to Wamego since April. After the flood, they ran a spot check of the entire area. The detailed survey will not be complete until sometime in 1952.

While it's still too early to release figures on their findings, both men confirm soil flood damages have been greatly exaggerated.

Sandy soil that many people think is ruined now can become the best soil in the valley within a short time if farmers will handle it correctly, the soils men said. Addition of green manures, and any other kind of humus for organic material is what is needed in the sand.

The College has pictures on file of sandbars left from the 1903 flood—sandbars that are part of farms which have been selling for $500 an acre or more.

"Sand on sand makes no change in productivity," Atkinson said. "More plant nutrients have been added. But sand deposited on loam soil can be detrimental. Sand on clay actually improves the workability of the soil."

"We've heard nothing but sad news from the flood. Besides enriching a large part of the river valley land, the flood filled in some low spots that formerly were drainage problems. Now they drain well," he said.

Once the sandy soil is improved some with organic materials, it will produce alfalfa, sweet potatoes, corn, wheat, and other crops—the same as the 1903 sandbars have been doing consistently.

Homes, fences, crops, and city property were damaged extensively by the flood, Atkinson admitted. But he said he felt farmers would find their soil would, for the most part, produce more than it did before the flood.

Floods have long been a part of the picture of river valley farming. Old timers have recognized this and made allowances for such high water. They're still holding onto their land, Atkinson said.

Of the severely damaged land—the 10 to 20 per cent—most of it lies in a narrow band bordering each bank of the stream. Damage consisted of caved-in banks, gouged and scoured.

What can you do about the flooded land, particularly that which was scoured of crops? K-State agronomist Luther Willoughby says to get it covered as quickly as possible. Rye, oats, wheat, weeds—anything to help hold the sandy soil in place when winds come whooping across the valley next Winter and early Spring.

The sandbars may have to be leveled a bit. The PMA office is seeking payment for the valley farmers to aid in that work. But as yet, they haven't cleared through the governmental red tape.

Working the sandy deposits in with other soil has been recommended. When the soils are mixed, the agronomists and the soils specialists agree that valley land is well on the road to recovery.

Barnwarmer Time Again

Dunkin' and Dancin'

By Dale Evans

ALL GENTLEMEN FARMERS dressed as gentlemen can plan on a swim in their own private pool during the 1951 Ag Week, says Bill Brown, chairman of the horse tank committee.

"We're going to dunk more than ever before," this husky five-foot, three-inch senior claimed with a menacing look in his eye.

The location of the tank, as far as is known now, will be slightly south of East Ag and west of Willard, "but not too close to Vet hall," Brown cautioned. The Aggies worked several days repairing holes put in the tank last year by someone definitely not friendly to the Aggie cause. Horse doctors were suspected.

This marks the 22nd annual Ag Week here on the K-State campus. Formerly called the Ag Fair, this activity-bustling week has become as traditional as autumn football games and varsity hops. Aggies show their brother and sister schools, that they, too, have social affairs and can see the lighter side of life.

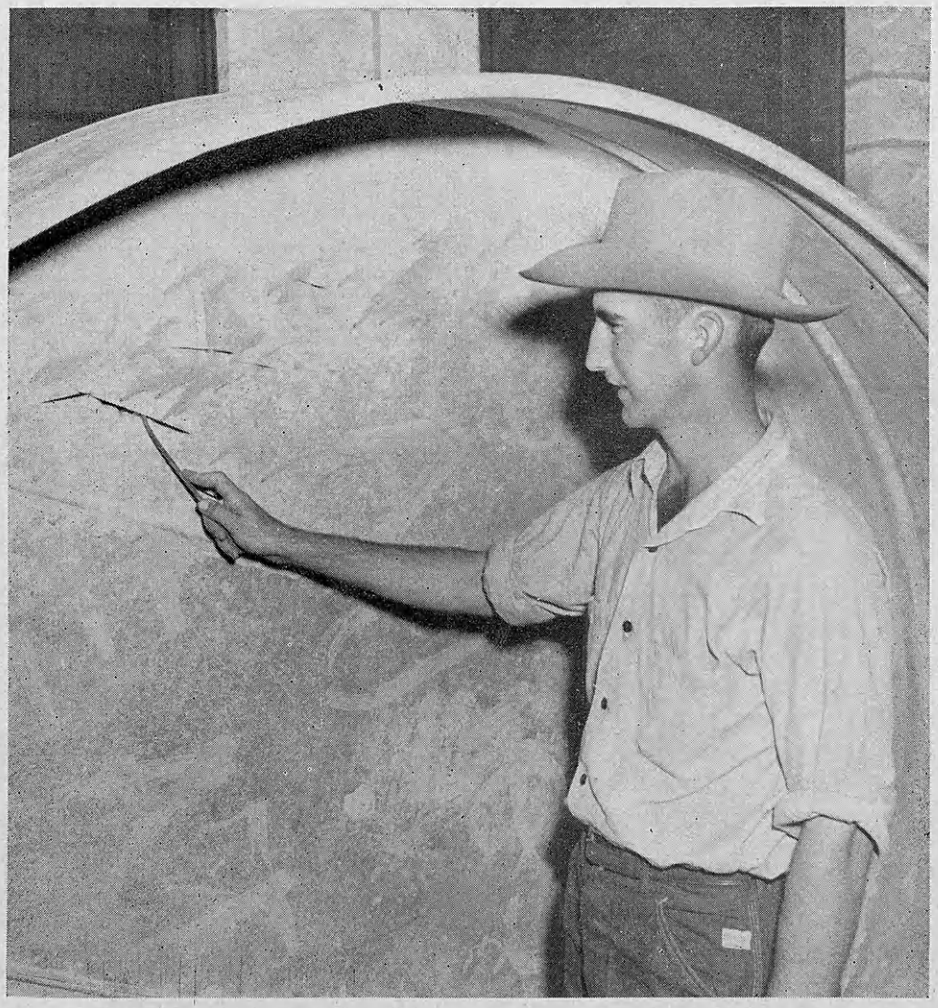
But there is far more to Ag Week than the "formality" of dunking overdressed farmers. Every Aggie is secretly thinking of his own Barnwarmer Queen for the Saturday night be-bop, October 13.

True, there will be an official Barnwarmer Queen, usually some freshman girl chosen for her good points and lack of sisterly malice. As each Aggie glides across the floor of Nichols Barn to the music of "Zeke" Betton, there will be little doubt in his mind that he has the real Barnwarmer Queen in his arms.

Anyone who has ever worked on or with a committee connected with the Barnwarmer realizes the tremendous amount of work it requires. This year's committee, headed by Warren Nettleton and J. E. Zimmerman, has done a wonderful job.

Sub-committee chairmen include Charles Kinast, decorations; Armin Grosse, property; Donald Love, clean-up; John Krell, tickets; Donald Shoup, music; Donald Mackintosh, refreshments; Glen David, queens; Louis Campbell, Fire control and checking wraps; Bill Brown, horse tank; and Stan Creek, publicity.

Who Dunnit . . .



WILLIS RINGER, sophomore in Ag Education, points to the slits in the horse tank used during Ag Week for dunking Gentlemen farmers. This year many hours were spent with a welding torch patching up the holes made by someone not friendly to the Aggie cause. Only Ag Students who do not wear jeans and red neckerchiefs are dunked.

Sweetclover sown in the spring may be cut for hay or for forage, or utilized as pasture any time from early in September to the first killing frost without any reduction in the next year's crop. Earlier harvesting may interfere with maximum storage of food in the roots and the development of buds at, or just below, the surface of the ground.

Most spinsters are ladies who've failed
To get themselves properly maled,
But a bachelor's a man
Whose careful-laid plan
To be lassed-but-not-leased has prevailed.

Urged by Millers

Feed Tech Slated

By Dick Fleming

K-STATE'S latest proposed addition to the Ag School is the four-storied shell-like Feed Technology building. If it goes up as planned now, the new wing will join East Ag on the east.

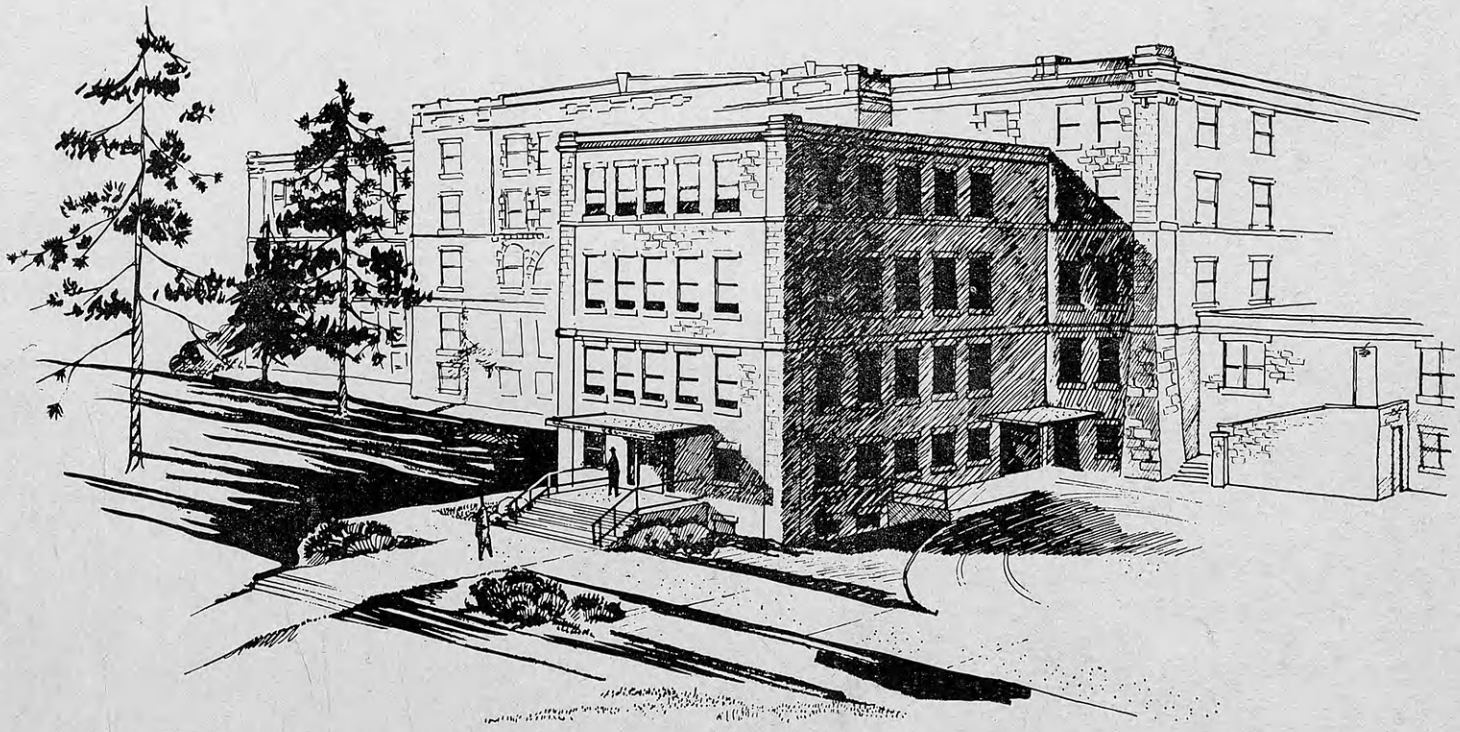
The next building will eventually house classes in the Ag School's newest curriculum, Feed Technology, begun this fall for the first time. So far 13 men have enrolled. It will be limited to 100 students when the course gets into full swing.

The feed industry rather than the College demanded a Feed Technology curriculum and research program. As Dean R. I. Throckmorton of the School of Agriculture said in a speech earlier this year:

"The formula feed industry in the

(Continued on page 30)

Four Stories, No Floors . . .



THE NEW $150,000 Feed Technology building, to be attached to the east side of East Ag, will have no floors above the ground level. Steel beams will support the machinery at various levels. Students and visitors may view the entire layout inside. The building will house classes in the new Feed Technology curriculum. The feed industry appealed for the curriculum and have collected $134,500 for the construction of the building, so far. Kansas State has the only milling school of its kind in the United States.

An Aggie Goes to SPC

By Stan Creek

LLANO THELIN went to the fifth annual three-day Student Planning Conference at Camp Wood as a representative of a church group. Problems were argued and recommendations made reaching far beyond any one group or any one school.

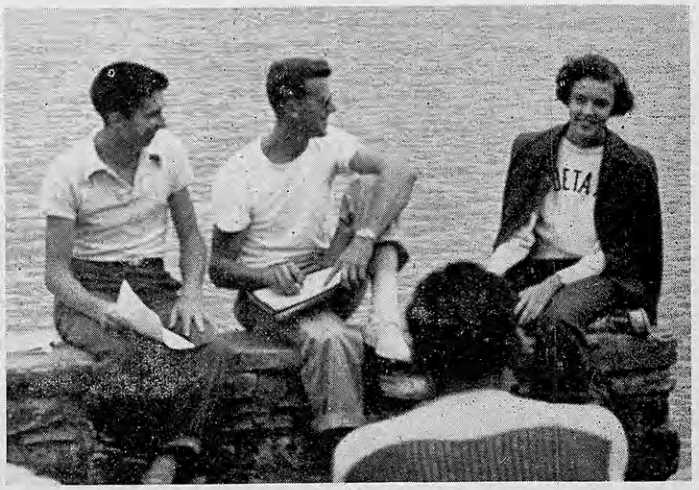
Interspaced with discussion were enough sessions of fun and relaxation that the 123 volunteer delegates agreed one could hardly find a better three-day vacation for $1.50, the only fee. The pictures of Llano on these pages depict typical experiences of an SPC delegate this year. SPC began September 3.

The weatherman drenched the YMCA camp near Elmdale for the first day and a half, but blue-jeaned campers paid little attention to the frequent showers.

Dean William Craig was introduced to students for the first time at Camp Wood by President McCain. Bill, as everyone was soon calling him, proved to be one of the best square dancers on the floor.

Our photographer canceled his assignment when it came to following Llano through some of his "relaxation," such as horseback riding in the eerie hours of the dawn. On volleyball games, our man laid his camera aside and joined one of the teams. Llano is shown here as he packed his stuff into one of the ten-bunk cabins. He's well equipped: notebook, tennis racket, blankets.

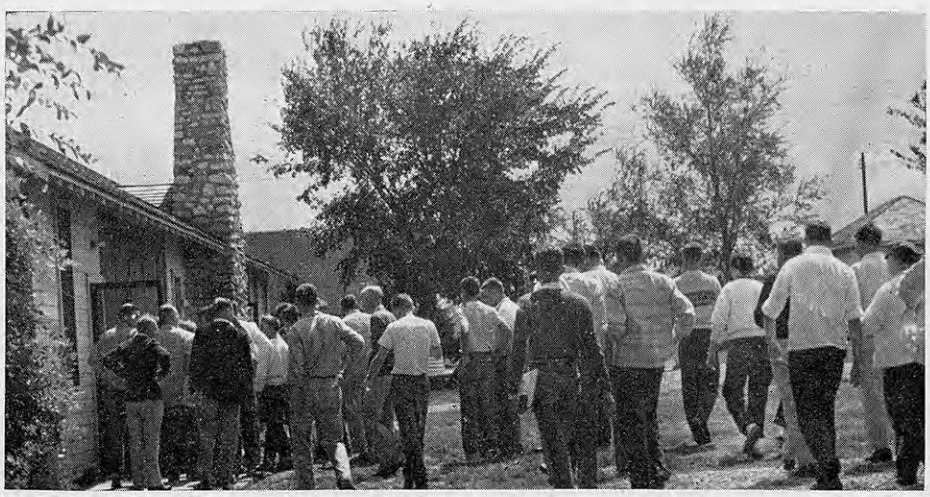
Llano at breakfast. That's Dr. Myers in the near corner.



Pat Porter and Dwight Gilliland flank Secretary Thelin.

Straggling in for general assembly in Hutch Hall.

Nuzman and Thelin vs: Enns and Judy Paustian.

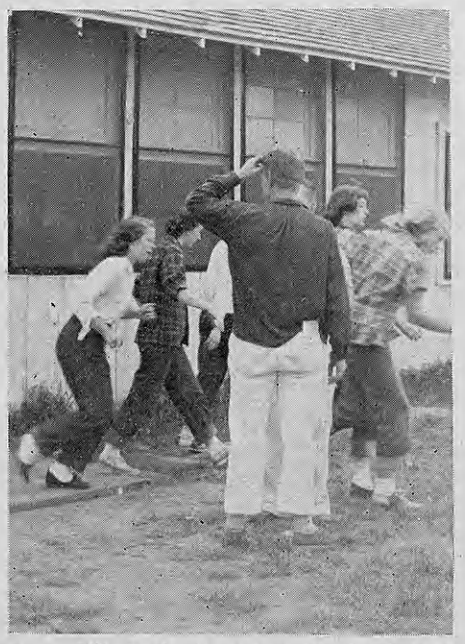


Dinner bell brings the flock together in a hurry.

Tete-a-tete at twilight.

Texas Star time.

Llano, packing up, little dreamed high water would block the road out from camp (below). Eighteen inches of water across the road made a tractor necessary.



Dean Bill Craig scratches his head perplexedly as a covey of girls dash past.

Veterinarians Search for

Hemorrhagic Factor

By Nick Kominus

IMAGINE YOURSELF walking through your herd of cattle. Suddenly you notice blood seeping from the nostrils of some of the animals. Before the day is out, many of them are dripping blood from the nose.

It's not a pretty picture. A Southeastern Kansas feeder found this condition in his herd last February. The grade Herefords had been on full feed of soybean pellets supplemented by native pasture or, when the weather was bad, blue stem hay.

The sick cattle continued to feed normally for a few hours and exhibited no other symptoms than the bleeding from the nostrils. The bleeding was increased by exercise and handling.

Then some of the animals died within 72 hours after the blood was first noticed. Others lived for approximately three weeks. The problem was presented to the K-State veterinary school.

Dean E. E. Leasure and Dr. M. J. Twiehaus of the School of Veterinary Medicine started investigating the case.

They noted as the cattle grew worse, temperatures increased, respiration became faster, and dehydration took place. The pulse became rapid and irregular. Just prior to death, the animals became weak and a marked depression set in.

Autopsies revealed hemorrhages throughout the bodies of the cattle.

The two veterinarians eliminated the possibilities of an infectious disease or plant poisoning. In turn they began research on the possibility of the presence of a hemorrhagic factor in the feed.

The cattle had been fed soybean pellets made with meal from which the oil had been extracted with tricholoroethylene. This chemical is a heavy, colorless liquid used as an industrial solvent for waxes, resins, and rubbers. It is not known whether this affects the soybean meal or not.

A feeding project to test the feed was undertaken with two Holstein bull calves. Soybean pellets, obtained from the stricken ranch, baled prairie hay, and salt made up the ration. The calves were fed 3½ pounds of pellets twice a day.

In three months the calves exhibited exactly the same symptoms observed on the original herd. One of the calves died.

A preliminary report on the case states "it is apparent that animals must consume this feed at a relatively high level and over a fairly long period before this hemorrhagic factor manifests itself. The degree of susceptibility apparently varies with individual animals."

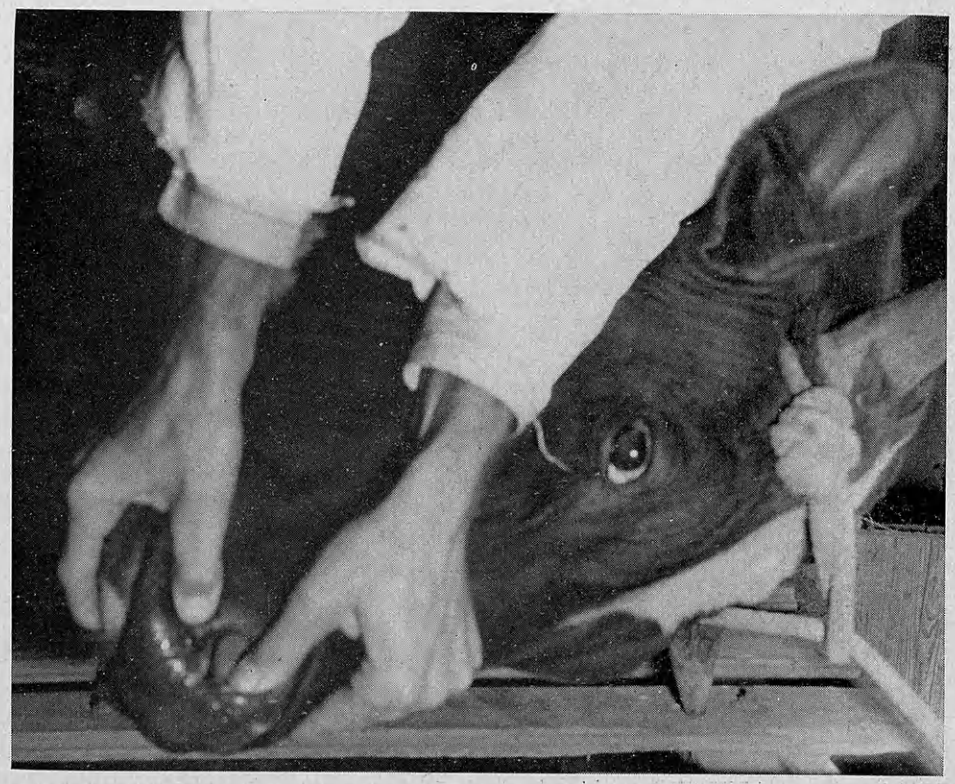
An additional report will be released when the second calf dies. But the hemorrhagic factor within the feed itself is still unknown.

The young man was breezing down the highway when his fair companion clutched his arm and cautioned, "Please don't drive so fast."

"Why not?"

"The policeman on the motorcycle can't get by."

Got a Kleenex . . .



K-STATE VETERINARIANS are conducting a feeding experiment on the hemorrhagic factor in soybean pellets. This Holstein bull calf exhibits the same bleeding of the nose as that in a stricken herd in southeastern Kansas. The hemorrhagic factor has not yet been found.

East Ag Residents Know

Hybrid Corn Pops

By James Warren

HOW LONG has popcorn been with us? It has been commercially important only since 1890, but Indians of North and South America grew it long before the white man came, for hundreds—even thousands—of years.

Unless there is a big market for popcorn in your locality, it is considered hard to produce profitably. Profit in the areas of local buyers depends on the grower's ability both as a merchant and as a producer. In many cases farmers work out a contract with a buyer before planting.

Iowa has long been the leading state in popcorn production. Kansas ranks eighth.

All starchy corns fall into four classes—popcorn, flint corn, dent corn, or flour corn. Popcorn has the largest percentage of hard starch in the kernels. Flour corn is composed of soft starch only.

Popping is caused by the sudden release of pressure from steam produced from moisture within the kernel. The more hard starch a kernel has, the better it will pop.

Flint corn may pop fairly well and dent corn a little, but flour corn will not pop at all. Freedom from soft

(Continued on page 27)

Aroma Draws Them . . .

WHEN THE CORN-POPPING machine heats up in East Ag, people from all over the building are drawn to it by the tempting odor. While the Ag Student photographer took pictures of the machines in operation, several people wandered into the room. Helping themselves to freshly popped corn are, left to right: George Wright, Austin Zingg, Neil Woodruff, Dorothy Russ, and Dr. Loyd Tatum, who is doing research.

Poultry Plus Sheep

K-State Wins

By Dick Fleming and Si Brandner

TWO CHAMPIONSHIPS and six firsts were won by the Kansas State Poultry club with 14 birds at the Kansas Free Fair in Topeka this fall.

The club also brought home over $26 in prize money. This is the first time the club has entered any contests, president Don Grisham said.

When asked how the birds were prepared for showing Grisham said, "We prepared the birds much like cattlemen fit their cattle for show. Most people don't think about washing poultry, but we washed them in warm soap suds. It takes a lot of suds," he added.

After washing, the birds were rinsed in warm and then cold water. Usually it takes 24 hours for the birds to dry off.

When dry, the feathers were ruffled and needed to be smoothed. This was done by rubbing them between silk or velvet. The polishing also helped restore the natural lustre.

At the Fair, more grooming was necessary. The combs and wattles were rubbed with olive oil and glycerin to bring out the red color. The beaks and shanks were rubbed with paste wax to brighten the yellow color.

"These methods are not new," Grisham said. "They have been used at bird shows for years."

Best results were obtained when the birds are washed twice. When this was done the washings were at least 24 hours apart. Birds being groomed for show purposes were penned up away from the rest of the flock, Grisham pointed out. Extra handling helps tame them and make them show better.

"It takes at least three days to get the birds in shape for showing, but

(Continued on page 29)

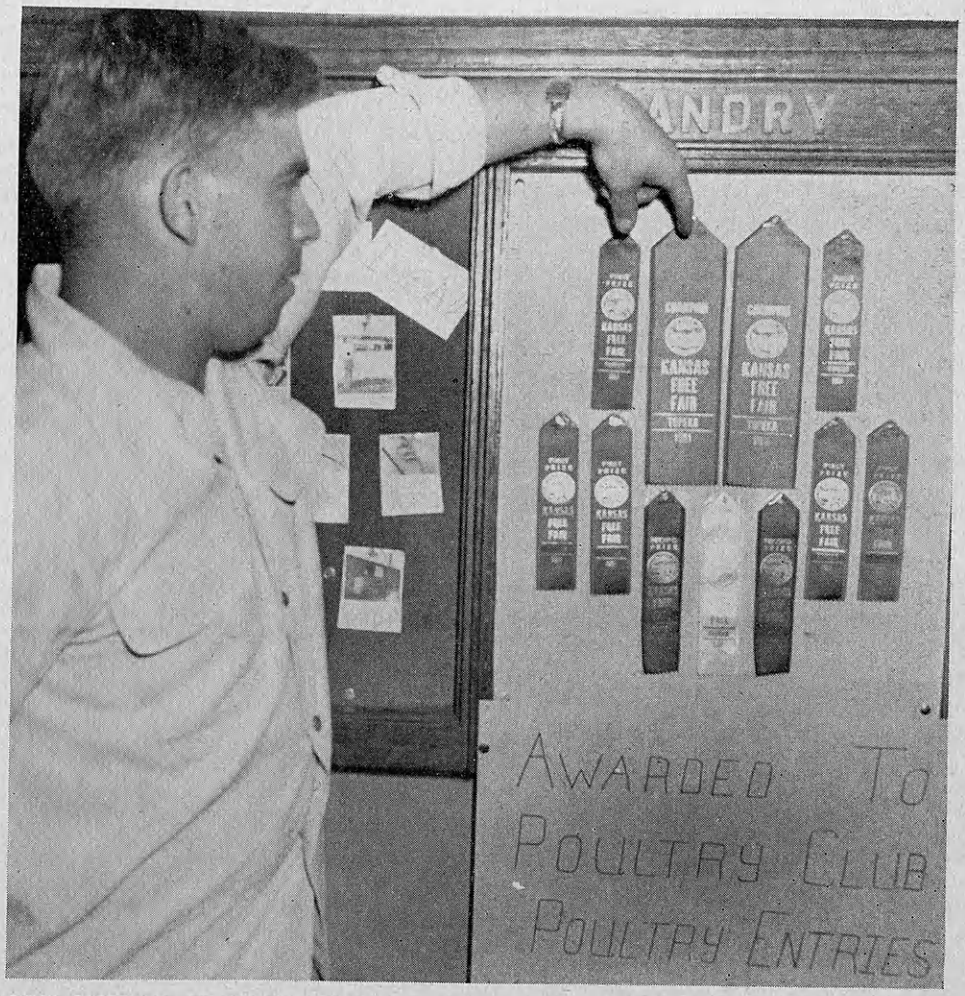
FOUR FIRSTS were won by K-State's sheep entries at the Kansas Free Fair in Topeka this fall. A total of 21 Hampshire, Southdown, Shropshire, and Suffolk sheep were entered, Professor T. D. Bell said.

Blue ribbons went to the Kansas-bred Hampshire flock, the Southdown flock, the Kansas-bred Southdown flock, and the Aged Southdown ewes.

Runner-up ribbons included five reds, four whites, two fourths, three fifths, and three sixths.

Breeders from Nebraska, Missouri, and Iowa as well as from Kansas were represented at the Fair, Bell said.

Poultry Ribbons . . .



DON GRISHAM, PRESIDENT of Poultry club, points to ribbons, displayed in West Ag, won by the club at the Kansas Free Fair in Topeka this fall. The club won championships with their White Rock cockerel classic class and their White Leghorn pullet class. Club members spent several days preparing the birds for showing. This is the first time they entered a contest.

Robert W. Facht . . .

South American Swede

By Everett Browning

ROBERT W. FACHT, born of Swedish parents in Buenos Aires and speaking English with an American accent, is a freshman in the School of Agriculture today.

"People usually don't believe me when I tell them I'm from Buenos Aires," said Facht between sips of Student Union coffee. "Girls, especially, think this is some new line so I usually retort with, 'all right, I'm from Hoboken, N. J., if that makes you any happier.' "

Facht was educated in a British grammar school and an American high school, both in Argentina. He is as fluent with Spanish and Swedish as he is with English.

After high school, Facht decided to attend an agricultural college and eventually go into the cattle business in Argentina or Bolivia. Francis O'Grady of Hays, Kan., who is now working for a veterinary firm on foot and mouth disease control in Latin American countries, recommended Kansas State.

Enrolling in animal husbandry, Facht plans to minor in agricultural administration. His father is with Swift and Company and also owns land and cattle in Argentina and Bolivia. Other members of his family are prominent land owners in Argentina.

An old hand at crossing the Atlantic ocean, Facht's trip to Kansas offered little new except a change in scenery. The South American Swede shows little of the awe-struck wonder at new places that the average 18-year-old shows. When he was three, his family moved to Sweden where he lived until he was five, then moved back to Argentina. Again in 1946 the Facht family went to Sweden and Norway for a six months stay. He has also traveled in most of the southern Latin American countries.

Facht likes the easy informality in dress and manners at K-State. In Argentina, and especially in the cities of Argentina, the dress is drab and the manners formal. Men wear only dark suits and a person is considered undressed unless he wears a coat.

Facht recalls a time not long after a Communist demonstration had been staged. He and a group of high school students were wearing red sweaters from a North American college. They were taken in by police on suspicion of being Communists. After being questioned, they were allowed to go but were told to wear something different as "respectable people just do not go around that way."

Favorite sports with Facht are basketball (he looks forward anxiously to seeing K-State's noted team play) and soccer. But he is quick to add that while he participated in sports in high school, he is a spectator sportsman.

An unusual awareness of world happenings and a sense of personal responsibility distinguish Facht as a remarkable freshman.

Another Conflict . . .

ROBERT FACHT, right, discusses a schedule conflict with Assistant Dean C. W. Mullen. Facht says Buenos Aires is his home, but he has spent quite a bit of time in Europe and speaks English with an American accent. K-State was recommended to him by a veterinarian from Hays, Kans., who is working on foot and mouth disease in Latin America.

Her form was very fine
And I scanned it.
(You should have read this line
Before the censor banned it.)

More than 15,000 acres of sorghums are being inspected for certification last year, according to Shannon Nickelson, assistant secretary of the Kansas Crop Improvement Association at Manhattan.

The acreage will provide plenty of certified seed for next year's crop, if frost does not come too early this fall.

As for specific varieties, Nickelson says there will be more white combine kafir 44-4 this year. About 1,700 acres of this high yielder are being inspected. It should be popular with Kansas farmers, Nickelson believes.

PROF. L. F. PAYNE was among the 1,500 representatives from 39 nations that met at Paris for the 9th World's Poultry Congress last summer. The purposes of the Congress were to promote poultry information and to encourage fellowship among the nations of the world. Professor Payne, head of the department of poultry husbandry, was one of the 150 representatives from the United States. Pan American stratoliner was used by Professor Payne for his journey. This is the fourth Congress that Payne has attended.

World Poultry Congress---

Payne, Paris, Ooo la la!

By Dale Evans

FLYING TO EUROPE to attend the ninth World's Poultry Congress in Paris was the highlight of the summer for Prof. L. F. Payne, head of the department of poultry husbandry at Kansas State. This was the fourth Poultry Congress Payne has attended. He went to Ottawa, Canada, in 1927; London, England, in 1930; and Cleveland, Ohio, in 1939.

The 1951 Congress was held from August 2 to 9 inclusive. Some 1,500 people from 39 countries were present. Of the 150 Americans attending, only four were college professors. The other Americans represented poultry supply firms, hatcheries, feed companies, various national organizations, the U. S. government, and poultry publishers. Great Britain had about 250 persons present, the biggest delegation from any one country.

Purposes of the Congress were to promote poultry information throughout the world and to encourage fellowship among the people of all nations. Establishment of commodity standards and aiding in the development of the poultry industry

(Continued on page 26)

Bullbarn Initials

KABSU Uses I.B.M.

By Gordon Nelson

KABSU USES I.B.M. Sounds like the atomic age has come to artificial breeding, but not quite. It is, however, the mechanical age for sure.

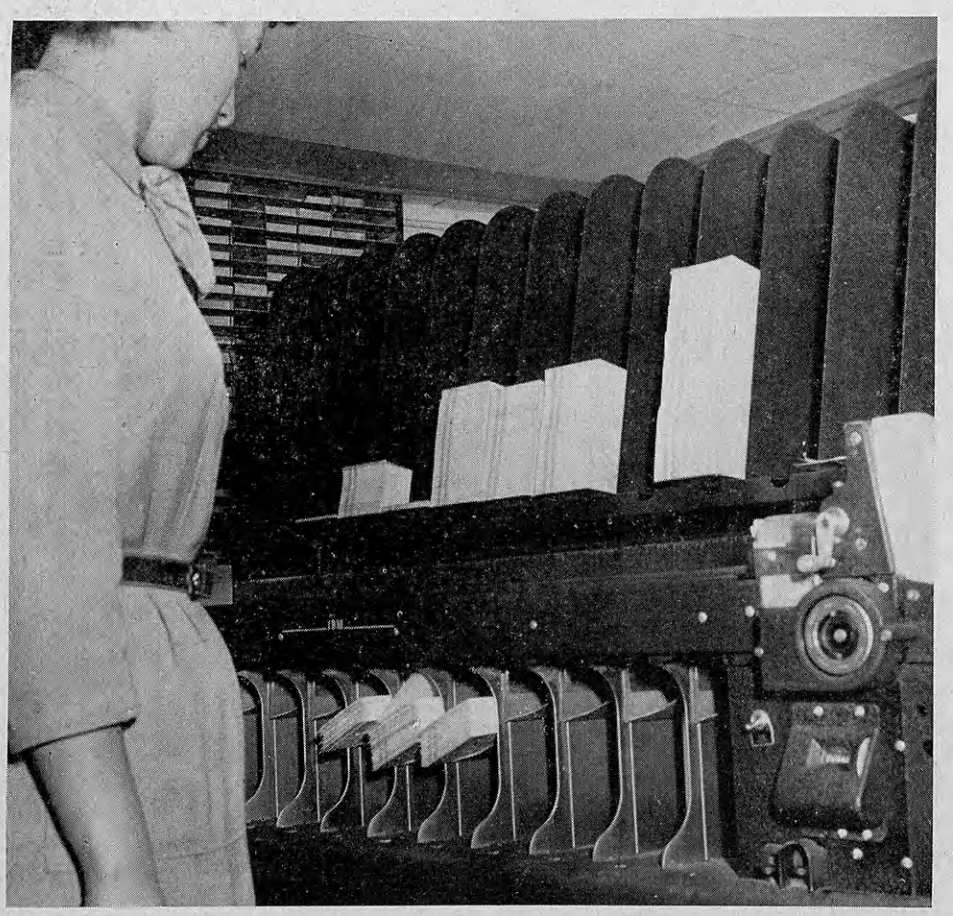
Earl L. Farmer, assistant professor in dairy husbandry at Kansas State College, and director of KABSU, believes I.B.M. will be a great help in improving artificial breeding service in Kansas.

By now most people know that KABSU stands for Kansas Artificial Breeding Service Unit, but I.B.M. is probably something new to many, particularly if they have never gone through the new enrollment system at K-State.

I.B.M. is the abbreviation for International Business Machine, the builder of the mechanical brains which were publicized so much during the war.

Most students at Kansas State College first became acquainted with I.B.M. cards when they drew their class cards during enrollment this last year. Information is placed on these cards by punching a series of holes in them. The cards can then be sorted by machine according to placement of the holes.

Bull Cards . . .



LABOR SAVER is the word for this International Business Machine which sorts data on KABSU bulls. Records of the bull used, identification of progeny, age and identification of the dam, and breeding receipts are available and can be assembled in minutes. The I.B.M. system also concentrates the filing system.

Now these same cardboard cards with all the holes punched in them will be used as breeding receipts at KABSU. According to Mr. Farmer, this will not be the first time I.B.M. has been used to keep breeding records, but Kansas will be the first to use the cards in the field as breeding receipts.

A breeding stud is required to keep the breeding receipts on file for at least seven years. At present these receipts take up a lot of room, and are of no use except when some question on the registration of an animal arises. Now 96,000 of these three by six inch cards can be filed in one cabinet.

Besides saving storage space, the cards will contain much other valuable information. With the aid of I.B.M. the data can be collected within a matter of minutes.

The labor saved will amount to one man work week each month in computing the monthly conception rate of the stud alone. Besides giving the conception rate for the stud, it is possible to get the efficiency of each association and each bull.

Other data kept on the cards will include record of the bull used, age of semen, post partum interval (length of time between freshening and breeding), identification of progeny, age of dam, identification of the dam, and whether or not the dam has any production records.

It is not possible to conceive all the information which may be made available by using I.B.M. However many of the benefits are obvious. Bulls will be proven at a younger age, and older bulls will be reproven on a much wider scale.

Information on the factors affecting the breeding efficiency of a cow has been lacking in the past. Now the data are available with less cost and on a larger scale than it has ever been possible to collect before.

One of the first observations made will be the effect of age on semen. It may be that if there is conclusive evidence showing it would be worth while, KABSU will start shipping semen by air. This would truly make it a mechanical age for artificial breeding and the old bull out in the pasture just won't stand a chance.

Another nice thing about silence is that it can't be repeated.

U. S. Extension Methods Bring

Bavarians to Kansas

By Dick Fleming

TWO BELATED ENROLLEES in the Ag School this fall were Rupprecht Zapf and Wolfgang Gruber, exchange students from Germany. They arrived in Manhattan September 22.

Both have enrolled in a general Ag course which will help them explain American agriculture and American democracy better when they return home. Both are interested in extension service and plan to do this work when they return to Germany next summer.

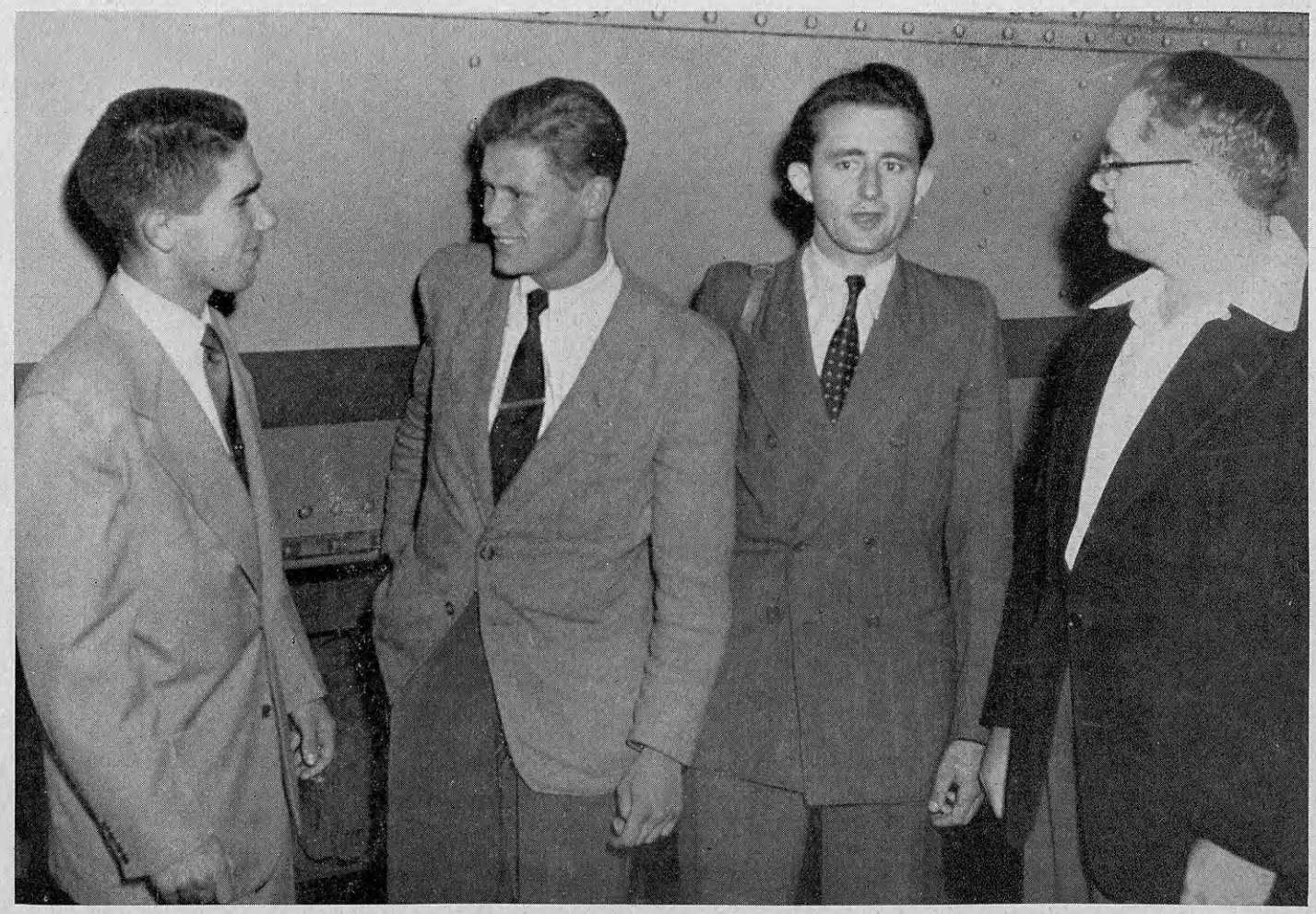
Gruber and Zapf are among 45 students who have come to America from Bavaria. Their trip was arranged under the state department's exchange and reorientation program.

Sixteen of the 45 students are studying agriculture. They were chosen from 200 applicants, mainly for their ability to get along with others and their political views. Most of the Ag students are studying in colleges in the Northwest where dairying is a more important industry.

Both Zapf and Gruber are city

(Continued on page 28)

Welcomed by Ag Journalists . . .



BAVARIAN EXCHANGE students Wolfgang Gruber and Rupprecht Zapf, center, are welcomed by Plow and Pen club officers. The visitors at K-State for the next nine months have bachelor's degrees in Agriculture and are taking special courses to fit their needs. Plow and Pen officers are Nicholas Kominus, vice president, left, and extreme right, Dick Fleming, president. Plow and Pen club members have taken the new students as a project to help them get acquainted at K-State. Fleming is also associate editor of the Ag Student, and Kominus is an assistant editor.

Call Goes

Back to Islands

By Ellis Stout

DEAN EMERITUS L. E. Call flew to the Philippines September 10, where he will be a consultant for the Economic Co-operation Administration at the college of agriculture of the University of the Philippines, located at Los Banos near Manila.

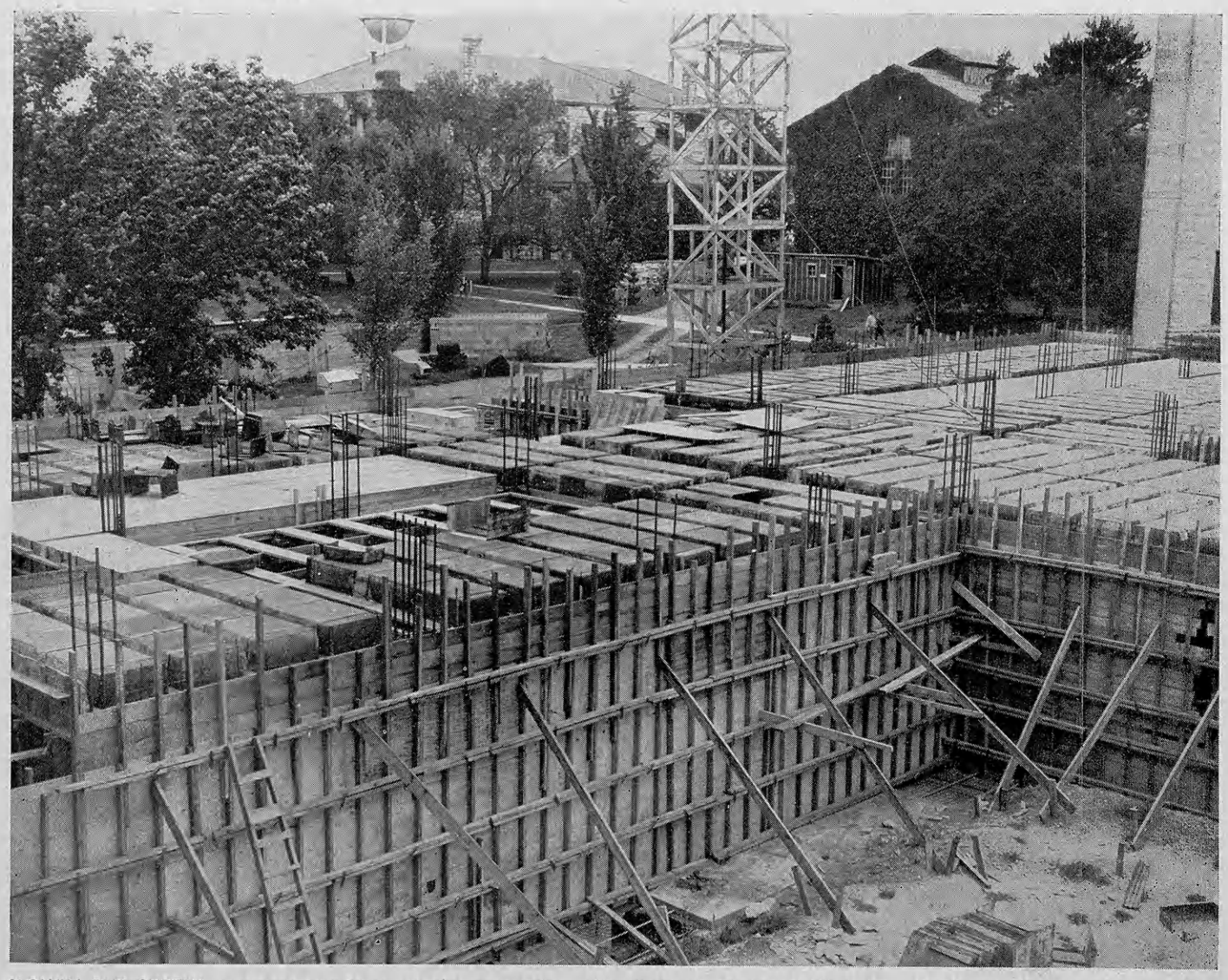
Dean Call will survey the possibility of rebuilding and improving that agricultural college which was damaged during the Japanese occupation.

The Dean stopped over night in Honolulu to visit friends on his flight to the Islands. In the Philippines he plans to visit a former K-Stater, John Hepler, who is now teaching at Silliman university. Dean Call formerly lectured there.

Conditions at the Los Banos will determine the extent to which the college will be reactivated and im-

(Continued on page 28)

Construction Lags . . .



SLOWLY BUT SURELY, progress continues on the connecting wing between East and West Ag. Floods, continuing rainy weather, scarcity of labor and materials, and delay on delivery of steel, aluminum sash, and electrical wire have set the completion date back. During the summer flood, the concrete plant and stockpile were washed down the river. College officials are now hoping to move in the new wing in spring of '53.

Dr. McCampbell Records

Pioneer Tales

By William Rankin

YOU'VE HEARD OF the whoop and holler of the Old West, the lusty tales of pioneers and early stockmen in Kansas. The better to preserve tales of pioneer Kansas stockmen, Dr. C. W. McCampbell is recording a personal history of many of them as his latest project in the Experiment Station.

Dr. McCampbell has always felt someone should compile a history of the more outstanding early-day leaders among Kansas livestock men. He, himself, did not have time to do this while head of the animal husbandry department, but since his retirement from administrative duties he has devoted considerable time to such a study.

College authorities backed him by making his study a regular Agricultural Experiment Station project—No. 246.

At present, the work consists of the preparation of biographical sketches of leading pioneer Kansas stockmen. One such sketch was published in the August, 1948, issue of the Kansas Historical Quarterly. Plans call for these sketches to be published either in book form or as a series of experiment station bulletins.

Biographical information is secured from books, agricultural publications, livestock journals, local newspapers, personal scrapbooks, personal correspondence, and the descendants of these pioneers.

As an illustration of the time-consuming nature of the study, Dr. McCampbell has carefully checked every issue of the Kansas Farmer from 1863 to 1910 for items about prominent early-day stockmen. These items are either copied or indexed.

The same kind of a check is being made on several other agricultural and livestock publications. Magazines are proving to be splendid sources of information about the activities of pioneers whose achievements were recognized beyond local limits, Dr. McCampbell said.

When he has gathered all the information available in magazines he makes similar surveys of hometown newspapers. Much interesting information, particularly that of a more personal nature, is derived from the papers.

Kansas State Historical Society has on file, in its library in Topeka, a copy of almost every issue of every newspaper that was ever published in Kansas. Dr. McCampbell checks local newspapers in these files.

If a pioneer being studied was a breeder of purebred livestock, the

(Continued on page 31)

Last Spring's Crop . . .

LATEST MEMBERS OF ALPHA ZETA include, front row, left to right: Norman Held, Wayne Shirk, Rollin Vickery, Bill Willis; second row, Doug Fell, Vern H. Fisher, Ken Currie, Cleo Kuhn, Phil Shideler; third, Jack Savage, John Huddleston, James Drain, Albert Adams, Jay Zimmerman, Everett Benes, Bill Beckenhauer, and Stan Creek.

Educators Wonder . . .

After Awards, What?

STATE FARMER DEGREES are awarded every Spring at K-State to FFA boys from all over Kansas who come here for their annual association meeting and vocational high school judging contests. Last Spring more than 1,400 attended while 130 State Farmer degrees were awarded, the largest group ever.

But how many of those boys actually go into farming for a lifetime profession? No one knew the answer to that question for Kansas, though such data have been collected in a few other states. Vocational ag teachers throughout Kansas figured they might be able to do a better job if they knew just what happened to their FFA lads after leaving the training courses.

So Frank Carpenter, a graduate of the Ag School in 1948, set out to find the answers desired by the educators. The work was geared to his study for a master's degree here last year. He now teaches at Beloit.

Carpenter sent questionnaires to all FFA members who had been awarded State Farmer degrees from

(Continued on page 26)

Where Do We Go from Here . . .

MORE THAN 1,400 FFA BOYS gathered at Kansas State last spring for the annual convention and the awarding of State Farmer degrees. There were 130 degrees awarded then, the largest number ever given. But what happens to FFA State Farmers after they leave high school? A graduate study revealed three-fourths of them were still in agricultural jobs.

Must Liberty be SCRAPPED?

Not the statue . . . she'd be last to go. But how about the things she stands for?

How secure is the freedom that has been *given* to us by those generations of Americans who sweated, froze, fought and died all the way from Bunker Hill to Bastogne—to Parallel 38? The foundation for the Bill of Rights and the freedoms it guarantees is only as strong as our determination to safeguard this priceless heritage.

Now, what can *you* do to keep alive the flame of Liberty—to keep it alive and *rekindle* it so that it might burn even stronger through the years ahead?

HERE'S ONE THING YOU CAN DO!

Today America is producing double—two assembly lines are going full blast. One line is building the materials necessary for the defense and preservation of our nation. The other is turning out everything from automobiles to arc lamps, from safety pins to box cars so that we might maintain our living standards even while we buckle on the sword for defense of those ideals that have made us a great nation . . . where the flame of freedom still burns bright to serve as a beacon of hope to a large segment of mankind.

All this takes scrap metal . . . *mountains* of scrap metal for steel. To produce a ton of new steel, it takes 1000 pounds of scrap metal. It is estimated that 36 million gross tons of scrap will be needed to meet production demands this year. Next year we will need even more. And scrap reserves are already dangerously low . . . not enough to carry through the winter ahead.

HERE'S HOW *YOU* CAN HELP

Look around your own home, your business, your farm, or where you work. Rusty sheet metal, discarded plumbing, obsolete tools or equipment—any metal that is no longer useful can be sold . . . AND IS URGENTLY NEEDED! Even a few pounds are valuable to industry and worth money to you when turned in to a dealer of scrap metal.

Back America's double production lines! Collect and turn in scrap metal NOW!

MINNEAPOLIS-MOLINE MM MODERN MACHINERY

Manufacturers of a Complete Line of Modern Machines, Visionlined Tractors, and Power Units for Agriculture . . . and Agriculture is *Basic* to Our Economy.

MINNEAPOLIS-MOLINE

MINNEAPOLIS 1, MINNESOTA

New Teacher, New Course

By Si Brandner

ANIMAL NUTRITION is being taught for the first time this year by a newcomer on the Aggie staff at K-State, Dr. Draytford Richardson. The course is designed to tie in such basic courses as chemistry, physics, and physiology with the practical side of animal husbandry.

Students will learn to tie in fundamental sciences with principles of nutrition, embryonic development, and other physiological functions. Nutrients within the feeds themselves will be studied along with feed cost. Students will learn what will produce the most and cost the least.

Ration formulas will be formed and a study of animal nutrient requirements made to determine just what is needed in the way of minerals, vitamins, proteins, and carbohydrates.

Dr. Richardson said organic chemistry would help students through the course but that those who had not had it could get an understanding of Animal Nutrition if they were willing to dig in a little.

Semesterly reports will be required of each student in bio-chemistry and practical feed problems from each student. A prerequisite for the course is feeds and feeding.

The subject will cover livestock and poultry generally, but will be principally interested in beef cattle and hogs.

Dr. Richardson is a newcomer to K-State this year. He took his undergraduate work at Clemson College, the South Carolina school of agriculture located at Clemson, South Carolina. He had four years in the army, did extension work in animal husbandry in South Carolina, was on the animal husbandry teaching staff of Clemson College and completed his graduate work in animal nutrition at Iowa State college this year.

His social life has gone to pot,
His will power turned to putty;
His eye is glassy, nerves all shot.
Canasta drove him nutty.

Chit Chat . .

By Dean Clyde W. Mullen

If we could get along without an editor of the Ag Student, we could get along without Chit Chat. If we could get along without Chit Chat, CWM could get along without working on Sunday to prepare copy for this column. That Stan Creek is a slave driver.

* * *

Across the desk comes the report of hearings before the Reinstatement Committee. There is real satisfaction in observing that hearings involving students in the School of Agriculture are only about one-fifth the number involved in other schools on the campus.

DEAN MULLEN

There is satisfaction, too, in noting that the College fraternity having the highest scholastic rating is made up largely of students in the School of Agriculture.

Lads, we are setting excellent scholastic records at the north end of the campus. Shall we begin to have a bit of school pride in that achievement and "strive to make better, best?"

* * *

I can't remember when committees and club presidents and the Barnwarmer group were showing more aggressiveness, than those groups are showing this fall. It hasn't been necessary to remind a single committee that it is time to get on the ball. Two departmental clubs have already jumped the gun and are asking for time before Freshman Assembly in advance of the usual date when all club presidents appear before the Assembly to set forth the merits of their respective clubs. It seems to me we started off in high gear this fall.

* * *

If freshmen in Agriculture read this column, this is a good place to remind them to call for their mail with regularity at the College post office. Important notices are already being fed into the mail and students who miss these notices frequently are at some sort of disadvantage at a later date. Students who do not have P.O. boxes should call at the window for mail.

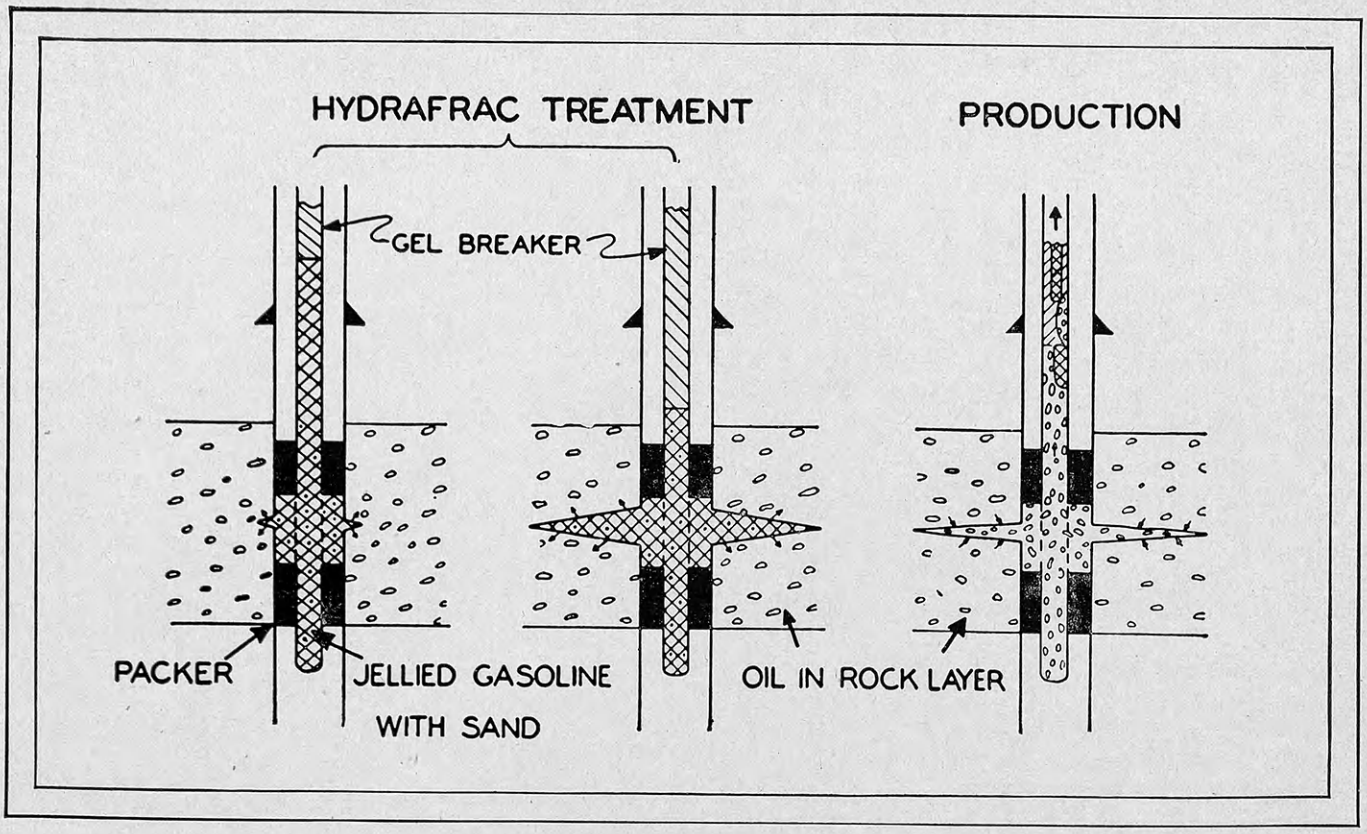
* * *

Why does the School of Agriculture have more freshmen enrolled this semester than were enrolled a year ago at this time? There are those who will say it is related to the prospect of postponing military service. This writer doubts that. It is a younger group of freshmen who are out of high school one or two years ahead of any possible military liability. It seems to be more in keeping with the trend toward an ever increasing percentage of high school graduates who desire a higher education.

In one company of 200 men in training at Ft. Riley, more than 50 per cent of the personnel are college graduates. Few companies attain that percentage. This group is made up of men who entered the service last June, which is the month following college commencements.

* * *

The Dean's bulletin board in East Ag carries some pointers concerning a slight change in procedures having to do with traffic violations. Students whose traffic violation compares with some that are listed on the bulletin board need not take their time—nor the time of their Dean—to be told that they are "stuck" with a violation. Students who believe their violation is excusable, and who desire to appear before the Student Traffic Control Board on a Monday afternoon at 4 p. m., are the ones who should see their Dean, or Asst. Dean Richard C. Potter, E116, to have their cases docketed for a hearing.



How "Jellied Gasoline" puts played-out oil wells back on their feet

THE PROBLEM of "rejuvenating" wells has become more and more urgent as tremendous civilian and military demands for petroleum products have continued to mount. A new hydraulic fracturing method has now passed the test of use on more than 3,000 wells in the field as the best way to get more oil from sources that have stopped producing.

Essentially, the new "Hydrafrac" method consists of two steps. First, a viscous liquid containing sand, or other granular material, is injected into the well under high hydraulic pressure. This causes fractures, or extends fractures, from the well bore into the oil-bearing formation.

Second, the viscous liquid—usually crude oil or kerosene and Napalm, the newly developed soap which was used in the war to make "jellied gasoline"—is broken down by injecting a gel-breaker solution. On release of the injection pressure, the resulting thinner solution flows back out of the fracture, now extended and widened, leaving the sand behind to hold the channel open for flow of oil into the well.

The Stanolind Oil and Gas Company of Tulsa, Oklahoma, Standard Oil's principal producing subsidiary, developed the Hydrafrac process after tackling the problem of "milking" old wells.

The process has been used both to obtain sustained production increases on "dried up" wells and to get a commercially practical flow from "tight" oil-saturated formations. Hydrafrac is now available, as a service, to the entire industry, helping it reach the higher and higher production goals of today.

This is an example of the interesting problems young engineers at Standard Oil face. And satisfaction in its solution is another instance of the rewards that come to the man whose research helps Standard Oil meet America's vitally important civilian and preparedness needs.

Standard Oil Company

910 South Michigan Avenue, Chicago 80, Illinois

STANDARD

K-Staters Take Over

K-STATE WRITERS virtually monopolized many pages of the September issue of Country Gentleman. Dean R. I. Throckmorton led off with the number one article in the issue while Dr. Loyal F. Payne took over further back.

Whether by coincidence or not, both articles were continued on the same page, number 103, to hold K-State's banner high at the rear of the magazine as well as at the front.

New Wheat Variety Released by College For Eastern Kansas

By Don Gramly

WHEAT SO NEW it has no common name yet was released this fall for Eastern Kansas at the Kansas Agricultural Experiment Station Wheat Conference.

The new variety is referred to technically as C. I. 12128. The original cross was made between the hybrid lines Marquillo x Kawvale and Tenmarq x Kawvale to secure a Pawnee-like wheat with more Hessian fly and leaf rust resistance. Dr. R. H. Painter made the original cross in 1935.

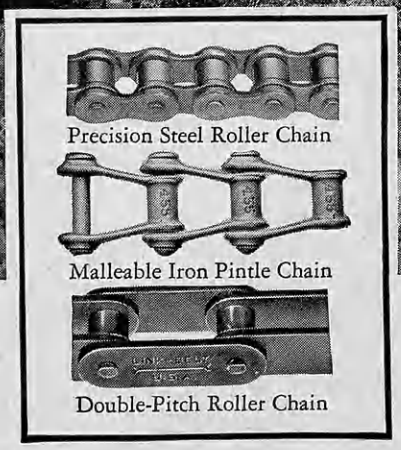
In tests the new variety has equaled Pawnee in yield, test weight, and age of maturity. It is the most resistant to leaf rust of all varieties adapted to Kansas and resists Hessian fly better.

For these reasons it is well adapted to Southeast Kansas where Pawnee is susceptible to Hessian fly. However, it winter-kills seriously in the western part of the state where Pawnee withstands Hessian fly.

Seventeen hundred bushels of the new variety were produced this year in Kansas and have been distributed for fall planting in the eastern third of the state. Some 1200 bushels of the new variety have also been sent to Oklahoma.

I used to think I knew I knew,
But now I must confess
The more I know I know I know
I know I know the less.

RESEARCH AND ENGINEERING BY LINK-BELT MAKE FARMING EASIER, MORE PROFITABLE



For eight drives on this forage harvester, the three different types of Link-Belt chain shown at left are used — each selected to meet specific requirements.

How the world's most complete chain line saves farmers time and money

LINK-BELT has worked hand-in-hand with America's farm machinery manufacturers since 1875 to step up farm production

FARM machinery designers were among the first to recognize there's no such thing as an "all-purpose" chain. That's why today more than 300 of the nation's leading farm machinery manufacturers build with one or more types of Link-Belt chain, the most complete line on the market.

It's no accident that Link-Belt chains are the leaders in the agricultural field. By maintaining a special laboratory and field research staff, Link-Belt has helped develop today's high standard of agricultural machinery.

For example—when one major company recently put out a new model, Link-Belt specialists took movies of the machine in operation. Motion analysis by film resulted in quadrupling the life of the main drive.

By supplying the correct type of chain for each requirement, Link-Belt increases design flexibility . . . lengthens chain life while reducing maintenance . . . actually steps up crop yield in many cases. For a positive, efficient, long-life drive—resistant to all kinds of weather —it's Link-Belt chain . . . every time.

LINK-BELT

CHAINS AND SPROCKETS

World's Largest Manufacturer of Power Transmission and Conveying Machinery

LINK-BELT COMPANY: Indianapolis 6, Chicago 9, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities. 12,328-A

Prairie Dogs, Gophers

Undermine Pastures

By Richard Golladay

MUCH DAMAGE is done each year to Kansas pastures and alfalfa stands by prairie dogs and pocket gophers. These animals, although appearing very "cute" and harmless, reproduce rapidly and may cause widespread damage if allowed to remain uncontrolled.

The prairie dog makes his home in permanent pasture land or in waste land. The animal does not cause damage to man, directly, but may injure livestock through the construction of his home. The prairie dog digs a hole straight down. It is not uncommon to have horses or cattle break legs by stepping in a prairie dog burrow.

Digger . . .

HARMLESS LOOKING, isn't he? But this little prairie dog may ruin your pasture. They feed almost entirely on grass roots, killing the grass and making large mounds of dirt.

Besides this constant danger to livestock, the prairie dog is a strict vegetarian, eating grass roots and leaves. In dry weather the grass may be killed because of an insufficient root system to get water.

Pocket gophers have been responsible for the complete destruction of alfalfa stands in many areas of the state. These small animals are seldom seen, but their presence can easily be recognized by the mounds of soft dirt, which frequently dot alfalfa fields. The alfalfa stand may be greatly reduced, and what remains will be difficult to harvest. These piles of dirt cause sickle drag in mowers and tooth scrape in side-delivery rakes.

Dr. Earl H. Herrick, professor of zoology at Kansas State college, in co-operation with the Kansas Agricultural Experiment Station, is in charge of the preparation of poison baits used to control these harmful rodents. The poison bait is carefully prepared in the basement of Fairchild hall, to be sent all over the state on request. The majority of orders come from county Farm Bureaus.

Poisoned wheat is used for the gophers, but poisoned oats are more effective for prairie dogs. The active ingredient used in this poison bait is strychnine. A small amount of this is very effective. Cornstarch and grease are added to make the mixture stick to the grain. Saccharine and molasses are added to sweeten the mixture, and make it attractive to the victims.

Application of this method of control is not difficult, provided the rodent population is not too great. Orders for this bait may be addressed to the Department of Zoology, Kansas State college, Manhattan, Kansas. The secret of control is to stop them before they get well established!

Built up poultry litter for best results should be six inches deep on the laying house floor by the middle of October. Clean litter may be added once a month, until the depth measures eight or ten inches. If the litter is kept dry and there are no disease outbreaks in the flock, removal of the litter once a year is sufficient. Shredded cobs, chopped straw, sand and shavings make good litter.

"What kind of a dress did Betty wear to the party last night?"

"I don't know, I think it was checked."

"Boy, that must have been some party."

Worried? Try

Dates in Iraq

By Sahib Bayee

WHILE THE PALM-DATE business may seem far removed from Kansas now, there are many former K-Staters working at this in my homeland, Iraq. And many more are likely to be engaged in this enterprise in the future.

The date-growing regions of Iraq lie along both sides of the Tigris and Euphrates rivers. The most important area of date cultivation in Iraq, and probably in the world, is that of Shat-Al-Arab, where about 138,000 acres of date palms are grown. The total number of date-palm trees is from 15 to 16 million, an average of 141 trees per acre.

Date-palm is classified as one of the Old World species of trees, cultivated for over 4,000 years. It was known to have grown along the Euphrates river 5,000 years ago, and is thought to have originated in this region.

Date-palms are propagated by suckers, and seeds. The suckers are separated from the parent plant when they are 3 to 6 years old. All leaves are removed from the sucker, leaving the bud protected by the stock. After being in moist dirt for a few days they are planted with the bud two to three inches above ground.

Suckers are usually planted 30 by 30 feet apart because the date-palm may grow 60 to 80 feet high. The advantage of propagating by suckers is that the new plants are just like the old plants.

The other method of propagating —by seeds—produces varieties which have no demand on the market, and produce mostly male trees. The trees are taken from the orchard two years after the seeds have been planted, and are transplanted to the regular orchard. Because nearly half of the trees produced by this method are males they are planted closer together and the male trees are removed later.

Date-palms require an abundant continuous supply of water around their roots in order to produce successfully and at the same time they need a dry and very hot climate. However, the date can grow with less water than most crops in Iraq. The importance of moisture is to help the tree grow under soil conditions which are very alkaline. The sun, and the dry, hot climate is necessary for the ripening of the fruit for better quality. A cold winter temperature is very injurious to date-

(Continued on page 29)

Payne

(Continued from page 13)

were also prime objectives of the Congress, Payne said.

In conjunction with the Congress, an exhibition was held at Port de Versailles, in another part of Paris. The exhibition was opened by the president of France, M. Vincent Auriol. Many entries of live poultry and commercial exhibits from various European countries were all housed in a building which covered several acres.

Meetings of the Congress proper were held in Sorbonne of the University of Paris. The university had an enrollment of about 49,000 last year. Various schools of the university are located in different parts of the city.

Poultry Congress programs were divided into two parts, Professor Payne explained. The first part was a general section and the second part was five sectional groups, where papers were presented by leading world poultry experts. These groups considered genetics, nutrition, diseases, economics, and general management. The meetings were thrown open to questions from the floor, through interpreters. English and French were the official languages at the Congress.

Field trips were taken to commercial poultry breeders' establishments, and to various other places of educational value.

All papers given at the meetings were published in full in the proceedings of the Congress. Professor Payne explained this cut down on the attendance at some of the meetings, as some persons preferred to read the papers rather than to listen to a speech in a foreign language, later to be repeated in English.

On his visits with French commercial poultry breeders, Professor Payne noted that the quality and productivity of their stock compared favorably with the breeding stock in the United States. He did mention, however, that French equipment, housing methods and marketing practices were not up to our standards.

One of the things that interested Professor Payne most in Paris was Halles market. This corporation was organized during the 13th century, and it has operated continuously since, making it the oldest corporation in France. All types of produce and meat are sold here, but Professor Payne elaborated on the handling of poultry. Poultry is killed, plucked, wire drawn and packed during the afternoon in various parts of France, up to 200 miles from Paris. It is loaded on trucks, and hauled to Halles without cooking or refrigeration. There it is unloaded, sorted and displayed for sale. At 7 a. m. the market is opened for buyers to rush in to make their purchases. Sales are limited to one-half hour. Birds not sold are refrigerated.

Professor Payne's style of travel was highly satisfactory, he says. His trip over was nonstop on a Pan American stratoliner. This type plane has two decks and a capacity of 64 passengers. The time required for the trip from New York to Paris was 13 hours at an average of 280 miles per hour for the 3,460-mile journey. On the return trip, Professor Payne's plane stopped at Shannon, Ireland, and Gander, Newfoundland.

When asked about his opinion of the French, Payne praised their artistic nature, but was quite frank in his criticism of their excessively noisy arguments and seemingly bunglesome methods in transacting routine business.

Following the Poultry Congress, the majority of Americans present took one of five tours to various parts of Europe. Payne elected to go to Geneva, Switzerland, a day's train ride from Paris. After spending three days there, he returned to America, convinced that there is much value to be gained, even in such a short trip as his.

"Meeting people from various nations and many from different parts of our own country is stimulating and refreshing to one's point of view," he said.

After Awards, What?

(Continued from page 18)

1929 to 1950, except those in the armed services. He got 784 answers back.

Approximately 62 per cent of the State Farmers were farming full time, Carpenter learned, and most of them were on farms of 300 acres or more. A little more than half of those who farmed, 56 per cent, were renters and partners but those who had been out of school the longest

were fast becoming established as owners.

In addition to the 62 per cent full time farmers, another 7 per cent farmed part time. About 26 per cent of those not farming were still engaged in occupations related to agriculture, 8 per cent of the total.

Totaled, these figures showed well over three-fourths of the boys who received the State Farmer degree were still engaged in agriculture or jobs related to agriculture.

About half of them went on to colleges. Carpenter's study revealed 74 per cent of those who attended college went to an ag college for all of their higher education but not all of them enrolled in the schools of agriculture, only 62.8 per cent.

The average FFA State Farmer is quite active in community affairs, according to the study. Of those who had received degrees 15 to 20 years previously, 36 per cent were engaged in three community activities each. Almost 47 per cent of them had held at least one office in a local community organization.

And almost to the man, they voiced unanimous approval of the Kansas program of vocational agriculture in the public high schools.

Popcorn Pops

(Continued from page 10)

starch is probably the most important factor of popping expansion for the different strains. Other factors determining popping expansion (the ratio of the volume of unpopped corn to the expanded volume) are the moisture content and proper application of heat.

Because of increased yields, standing ability, and popping expansion, hybrid popcorns have largely replaced open-pollinated varieties.

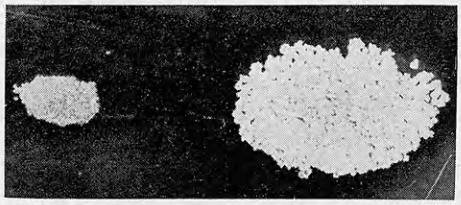
Most yellow hybrids have come from the Kansas and Purdue agricultural experiment stations. These crosses were all single or three-way crosses of Supergold and South American inbred lines which had been developed at the Kansas Agricultural Experiment Station.

One of the best hybrids on the market today, according to Dr. Loyd A. Tatum, USDA agronomist at Kansas State college, is K 4. It has a high expansion ratio and yield along with excellent quality. Two of the leading open-pollinated varieties in Kansas are South American and Supergold. Jap Hulless is the oldest open-pollinated variety in production today. It is very tender, but is not well adapted to Kansas.

Popcorn can be grown on any field that is suited for field corn production, but it should be on the more fertile soils. On this type of soil, the crop will have an opportunity to mature fully and to produce a high grade product.

Popcorn is planted much like field

Ratio . . .



POPPED AND UNPOPPED corn vary greatly in volume. On the left is a cupful of unpopped corn, to the right is a cupful popped. The expansion ratio is about 30 to 1.

corn. It can be listed or drilled, depending on the area. Popcorn yields most when planted half again as thick as field corn. Greater care in cultivation is required as popcorn does not grow as vigorously as field corn and therefore cannot compete as well with weeds.

In the central and northern sections of the Corn Belt popcorn usually isn't dry enough to pop at husking. After the corn is husked it is stored in cribs over Winter and sold the following Fall. Thus corn used for popping is a year old.

Dr. Tatum says that experiments to develop a popcorn with less hulls are in progress at the Kansas station. New inbreds are being developed from open-pollinated varieties and hybrids. During the inbreeding process intensive selection is practiced and only strains with strong roots and stalks, and good quality are saved. The inbreds which remain are then crossed to determine which will make the best hybrid. Tests of some of these new hybrids are now in progress.

First Stude: "I failed in my history examination."

Second Stude: "But I thought you had all the answers written on your cuff."

First Stude: "So I had, but by mistake I put on my geography shirt."

Bavarians

(Continued from page 15)

boys, but long generations of their families have been farmers.

Zapf is 25 years old and the youngest member of his family. He has a brother and sister.

In 1947 he enrolled in Weihenstephan at the College of Munich after two years of practical experience on a farm. Weihenstephan is most noted for its course in brewing, Zapf said. The first brewery was built here in 1146. Students from all parts of the world come there to study beer making. Enrollment totals 7,000 with 1,000 in the Ag school.

In 1950 Zapf received a bachelor's degree in agriculture and began work on his doctor's in agricultural engineering. The college does not offer a master's degree.

Zapf said he picked up most of his English two years ago when he spent three weeks in England. Gruber took one course in English while in grade school.

Gruber is 23, the second youngest of a family of five. He also enrolled in college in 1947, but at Landsberg on the river Lech. He graduated with a bachelor's in general agriculture in 1950.

During the past year Gruber worked for the Bavarian state office to reclaim swamp land. Like Kansas this summer, the main problem in those lowlands is too much water, Gruber indicated. The state encourages farmers to lay tile in those fields to drain excess water off.

Tile is laid in trenches made by track tractors with huge plows. First crop planted on this new land usually is oats. Next come potatoes, later rye. Reclaimed land is ideal for potatoes as there are fewer parasites and diseases. For this reason potatoes off new land are used for seed. Seed rye also is ideal from reclaimed ground.

But there are other problems besides reclaiming land which face German farmers, Gruber said. One of the biggest is how to cultivate small fields. The average farm in Germany is 45 acres, but this usually is divided up into 15 or 20 fields, often not connected. In some cases, these small fields are cultivated with small two-wheel tractors of eight or ten horsepower. Larger machines could not be used effectively, Zapf explained.

"Germany has tractor inflation. Right now there are more tractors than ever before. If a farmer can buy one, he has now," Zapf said.

Nearly all German tractors are diesel. Even the small tractors are diesel. Fuel is just half the price of gasoline. They start their small diesels by pre-heating with a coil off a battery. When the fuel is hot enough, it explodes in the cylinder and the engine starts.

Most of the tractors are made in Germany, Zapf said. Nearly all are air-cooled.

The two major types of farming in Bavaria are dairy and field crops. Dairy farming is important in the southern part where foothills of the Alps roll. Here, the ground is so rough and hilly that cultivation is almost impossible.

In the northern part, the land is not as rough and field crops are important. Wheat, oats, rye, barley, potatoes, and sugar beets are the chief crops.

German farmers have followed the practice of growing grains one year and row crops the next for generations. Only enough corn is grown to make silage for cattle. In drier sections of Bavaria clover and alfalfa are important.

Perhaps the wide use of these farming practices is due to a co-operative extension service there. Bavaria has the largest extension service in Germany, Zapf said. Extension there is a co-op kind, and not so much a state controlled venture as in this country.

Both Zapf and Gruber hope to learn more about the extension here so they can improve their own in Bavaria.

Back to Islands

(Continued from page 16)

proved by American agricultural and educational institutions.

Cornell university has tentatively indicated it will sponsor American instructors at the college if Dean Call's report is favorable.

No stranger in the Islands, this is the Dean's third trip to the Philippines.

Dean Call was there in 1946, serving as the chief of an agricultural mission for the USDA. Once again in 1949 the Dean returned as a Fulbright visiting professor at Silliman university.

The purpose of the Dean's work

was to promote agricultural development on both other trips, as it is on this one.

His entire trip this time including conferences at Washington after Dean Call's return to this country, will take about two months. He will be back November 18. Since he is to be gone such a short time, Mrs. Call remained in Manhattan. She accompanied him on both his other visits.

Dates In Iraq

(Continued from page 25)

palms, especially when they are young.

Palm-date has a great resistance to very hot weather. It is said, "the hotter the air the better quality of date produced." Also it was found that the palm-date will not be injured by a temperature of 10 to 12 degrees below freezing.

The fruit is distinguished by its color, size, and flavor, resulting from the suitable climate and soil in Iraq.

Date-palm is important not only as a food, but also because the stem and leaves are used to satisfy many human wants. It is one of the main products of Iraq, which produces about three-fourths of the palm dates in the world. The site of ancient Mesopotamia has 80 per cent of the date commerce, and has 20 million trees under cultivation.

K-State Wins

(Continued from page 11)

they should be worked a week before the show," Grisham said.

Fourteen birds were entered in six classes at the Fair. The White Rocks took first in the cockerel class, the pullet class, the trio class, and the cockerel classic. The cockerel classic winner also went on to take the championship over all breeds in the cockerel classic class.

The White Leghorns took first and second place in the cockerel class, and first, second, and third in the pullet class. The first place White Leghorn pullet was also champion of all Mediterranean breeds at the show.

Girl Friend: "I saw you flirting with that girl."

Boy Friend: "I wasn't flirting. Something got in my eye."

Girl Friend: "She got in your car, too."

Feed Tech

(Continued from page 5)

United States has had a phenomenal growth in the last quarter of a century. Although the formula feed industry has made a remarkable growth, it has by no means reached the upper limit of expansion because it is conservatively estimated that only 50 per cent of the potential market has been reached. There is much room for further growth and development.

"If the formula feed industry is going to be ready to meet its problems and to take advantage of its opportunities, it must have made available to it, the results of continued research and it must have strong young men who have been technically trained for the industry."

With the need of trained men and research in mind the feed industry set out to establish such a program.

The industry chose Kansas State for the program. No doubt this choice was based greatly upon available assets at K-State.

Among the assets is the milling school, the only one of its kind in the world, the student mill, the milling library, and a competent staff which has been turning out graduates in milling technology, milling administration, and milling chemistry. Dr. John A. Shellenberger heads the milling staff.

Coupled with this experience in milling are the fields of chemistry, nutrition, and engineering, all basic components of a Feed Technology curriculum. Also available are the school's animal industries, hogs, sheep, cattle, and poultry.

Tuition and living costs are also relatively lower at K-State than at many similar institutions. Since just one institution could adequately carry on the training and research program, K-State's location in the center of the country was favorable.

Last winter the board of regents accepted the offer of the feed industry to supply a building and equipment for the new program.

Early last summer the feed industry began collecting money for a $200,000 program. About $150,000 is slated for the new building. The rest will be made up of equipment and installation costs. Up to the present, $134,550 has been collected.

Preliminary sketches of the build-

ing show an addition to the east side of East Ag. Since the building will have no floors above the ground level students and visitors will be able to get an overall inside view of the building. This new design will also facilitate grain spouting as no walls will be in the way. A steel framework inside the building will support the machinery at various levels.

Paul Bergh, feed technology engineer from Fort Wayne, Ind., is consulting engineer for the building. When technological information on the placement of machinery is received, final drawings will be made by the department of architecture, Professor Paul Weigel said.

As set up the Feed Technology curriculum is much like other technical curriculums during the first two years, but each student is given a choice of three options—operation, nutrition, and administration during the last two years. The curriculum has the approval of the general faculty and representatives of the feed industry.

The four-year course will include mathematics, chemistry, physics, economics, and biological science as well as other required College classes. Elemental classes in the animal industries and specific classes in animal feeding, animal nutrition, and anatomy and physiology are also in the curriculum. New classes to be added include feed mill construction, feed analysis, elements of feed manufacture, feed formulations and blending, and feed technology. Students graduating in the curriculum will be specialized in the engineering, nutrition, or management phase of the feed industry.

The addition of the Feed Technology curriculum and research program not only offers a new field for K-State graduates, but it will permit a closer co-ordination of animal nutrition research with research in feed milling.

Pioneer Tales

(Continued from page 17)

registration records of the breed he raised provide a lot of information about his activities as a breeder.

No more appropriate research could be conducted by the animal husbandry department than a study of the pioneers who laid the foundation for the great Kansas livestock industry.

Also Used To Treat Humans

Addition of Antibiotics to Rations Has Given Faster Growth in Poultry

By Wayne Hanke

A FASTER RATE OF GROWTH than ever before possible in normal poultry is now obtained by the addition of antibiotics to well balanced rations containing all known nutrients, according to Dr. Paul Sanford of the poultry department.

Antibiotics are drugs which are produced by living organisms and which destroy other living organisms. Examples are penicillin, streptomycin, aureomycin, and terramycin, each of which is known to be effective in promoting growth of starting chicks and poults. The antibiotics are produced by drug manufacturers on a large scale for treatment of many human diseases.

Aureomycin, one of the new antibiotics, is teaming up with vitamin B_{12} to promise poultry growers a cheaper protein supplement which makes chicks grow faster than when B_{12} is used alone. Aureomycin produces a response even in the presence of an excess of vitamin B_{12}. Aureomycin appears to improve feathering, pigmentation and general appearance of chickens as well as improving the rate of growth.

The exact reason for the beneficial action of the antibiotics and other substances in promoting growth is not known as yet, except that it is known that the site of action is in the intestinal tract. The addition of a suitable antibiotic improves the nutritional state by removing certain bacteria which interfere with normal nutrition. The antibiotics could suppress certain bacteria which normally produce toxic substances. It is very likely that certain organisms in normal animals are somewhat toxic to the host animal and that the antibiotics depress or remove such organisms.

Sources of fermented products with antibiotic activity are available to feed manufacturers, as well as to poultry farmers. They are chiefly by-products, but may be primary fermentation products. The cost of crude antibiotics is very cheap.

Aureomycin, like penicillin and streptomycin, is obtained from a mold by fermentation. Fermentation products used in the preparation of antibiotics were found to contain vitamin B_{12} and these materials were developed as commercial sources of the animal protein factor for the feed industry.

Research has reached the stage where it is safe to recommend the addition of antibiotic activity to all starting rations. It takes the equivalent of approximately 20 to 25 grams of pure antibiotic or about 5 pounds of fortified APF supplements per ton of feed to give a growth stimulation.

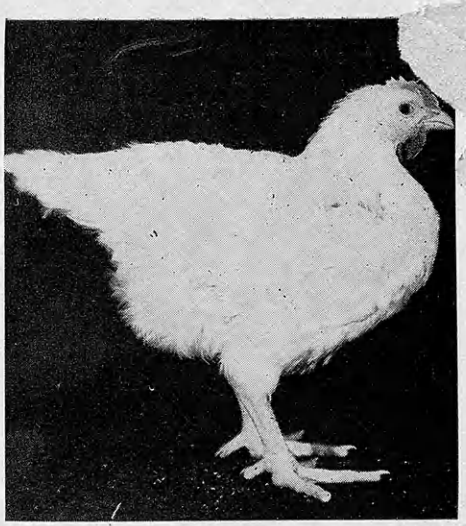
Practically nothing is known about the advisability of adding antibiotics to rations for growing, laying, and breeding birds. It is further complicated with birds on pasture or on built-up litter.

Research tests so far show no harmful effects of any kind when antibiotics are fed to starting poultry. Immunity by the bacteria to any one antibiotic may occur, but there appears to be a great number of other antibiotics to use.

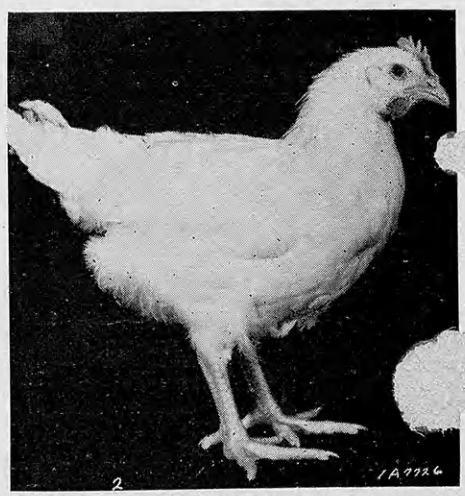
The addition of antibiotics or other drugs to a feed may increase the requirement of some of the vitamins. Detrimental effects may be discovered, when more research is done. Antibiotics may not always help all starting rations as it depends upon the ration and the ingredients that it contains.

Antibiotics should not be called vitamins as they are really drugs. No one drug can be expected to always be better than another. Results will vary due to differences in species, environment, and feed.

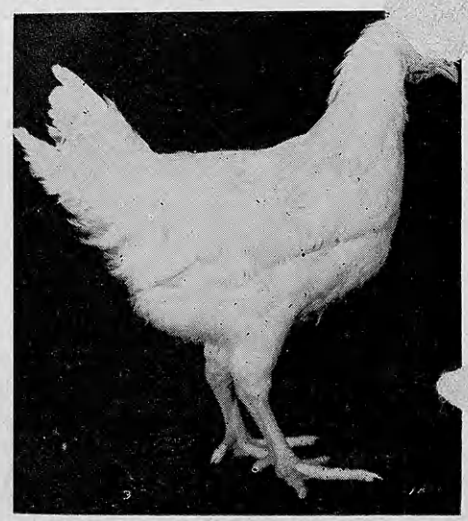
Antibiotics' primary importance is in extending the world's meat supply and decreasing its production cost. They may also prove directly beneficial to human health by aiding the growth of malnourished and undersized children.



VEGETABLE PROTEIN plus the basal die was fed to this eight weeks old White Rock. Now, she weighs 705 grams.



CRYSTALLINE VITAMIN B_{12} plus the same protein and basal diet nurtured this eight weeks old White Rock. As a result, weighs 900 grams.



BASAL DIET, VEGETABLE PROTEIN, vitamin B_{12}, plus the antibiotic aureomycin comprised the diet of this pullet. She weighs 975 grams.