

S
1
K3
42/4

L KANSAS STATE UNIVERSITY

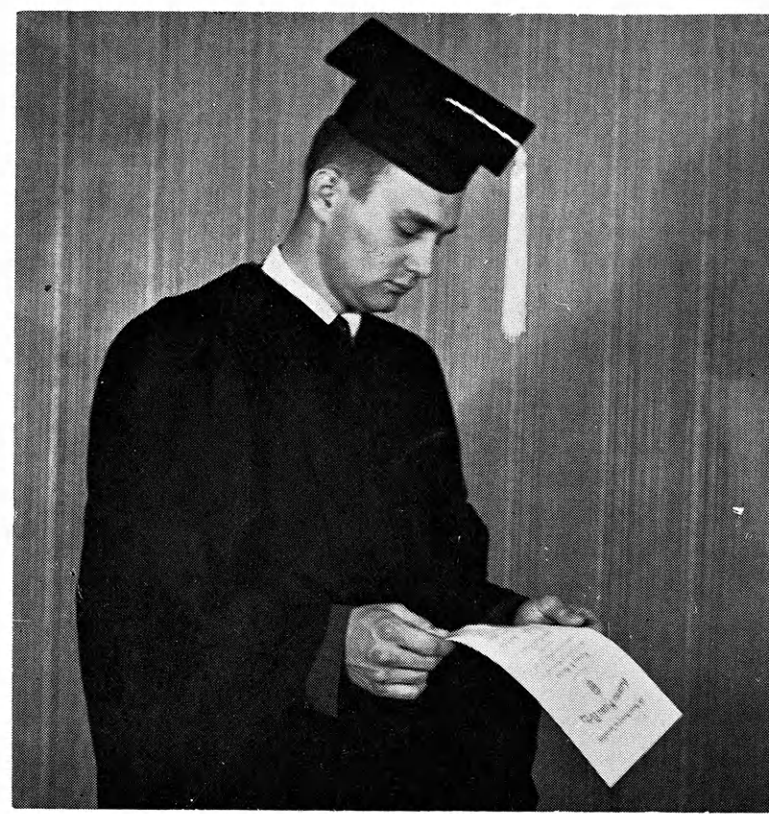
5105- C.1

L 3
A
KANSAS STATE UNIVERSITY
AG STUDENT



MARCH 1964

**Hard Work
Still Prevails
But Now It
Needs To Be
On Studies**



You Can Raise Your County's Standing . . . page 8



HARVESTPOWER

Farm equipment lives up to its design with the extra strength and endurance . . . the extra **HARVESTPOWER** of Link-Belt chain

HARVESTPOWER to spare! It's built into every strand of Link-Belt chain. *Extra* capacity to withstand starting, shock, and dynamic loads . . . to provide the trouble-free transmission of positive power at that all-important time when it's really needed . . . season after season.

The superior **HARVESTPOWER** of Link-Belt chain is a result of many manufacturing refinements. These processes—which go beyond ASA dimensional standards—add up to chain that *excels* in strength and durability. Today, over 300 farm machine manufacturers are taking advantage of the extra measure of **HARVESTPOWER** built into Link-Belt chain.

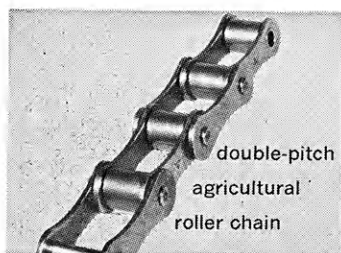
Link-Belt offers industry's most complete line of drive

and conveyor chains, chain attachments and sprockets. Also "bonus" services: application counsel, field analysis, laboratory service and others. These services multiply the value of Link-Belt chains, but not the price!

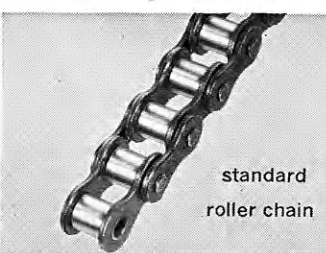
LINK-BELT

CHAINS AND SPROCKETS

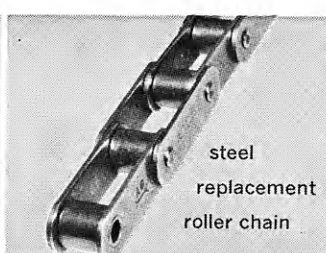
LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. Plants and Warehouses in all major industrial areas. District Sales Offices and Stock Carrying Distributors in all principal cities. Export Office, New York. Representatives throughout the world. 15,991



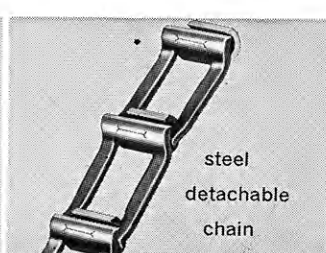
double-pitch
agricultural
roller chain



standard
roller chain



steel
replacement
roller chain



steel
detachable
chain

KANSAS STATE UNIVERSITY AG STUDENT



ON THE SECOND CENTURY OF SERVICE
TO KANSAS, THE NATION
AND THE WORLD

Vol. XLII March 1964 No. 4

Assistant Dean Frank Carpenter Speaks	4
Tumor-like Disease Hits Kansas Plants	5
Beauty, Art, and Coeds in the College of Agriculture	6
You Can Raise Your County's Standing	8
Ag Related Opportunities Abound	13

EDITORIAL STAFF: Darrell Garner and Lois Hudgins

ADVERTISING STAFF: Stanley Stout and Dean Davis

FACULTY ADVISOR: Lowell Brandner

The Ag Student Magazine is written and edited by students interested in agricultural journalism, and is published by the Agricultural Association of Kansas State University of Agriculture and Applied Science, Manhattan, Kansas, in October, December, February, March, April, and May. Subscription rates \$1.50 a year; 2 years, \$2; single copies by mail, 30c, at office 20c.

The Ag Student is a member of Agricultural College Magazines Associated, and its advertising agency is Littell-Murray-Barnhill, Inc., 369 Lexington Ave., New York 17, N.Y.

Second class postage paid at Manhattan, Kansas.

Cover photo shows a student in commencement regalia, symbol of a college education. In Kansas nearly all students go to high school but in some counties only a little more than one fourth of the high school graduates even start to college. If you want your county to start a higher percentage on the road to higher education, you can be quite influential among your peers. See the article starting on page 8.

TEXT BOOKS

**REFERENCE
BOOKS**

**PAPER-BACK
BOOKS**

**STUDENT
OUTLINE
BOOKS**

at

**CAMPUS
BOOK STORE**

EMERGENCY AA SERVICE

SMITH'S 66 SERVICE

11th and Moro, AGGIEVILLE

AGGIE HARDWARE

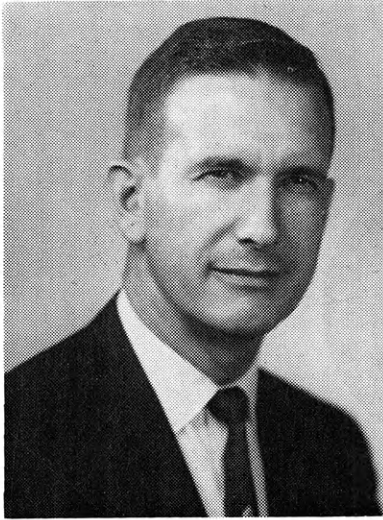
DO-IT-YOURSELF HEADQUARTERS

Shop Aggie Hardware first for your
hardware needs

Picture Framing

1205 Moro

Phone PR 8-2993



Frank Carpenter
Assistant Dean
College of Agriculture

Students Make Assistant Dean Optimistic About Future of USA

Help Balance Inequalities and Stop 'Shutting Off the Water'

"THEY shut the water off!" writes Seabee Jim Andrews, my son-in-law, from Guantanamo. I have not been particularly worried about the absence of baths because I know Jim likes to swim and there is plenty of water around Cuba.

I do wonder though, as probably every person in serious moments does, why are conditions as they are in Cuba, Cyprus, Panama, Berlin, U.S. (Civil rights), and other locations? The answer is not simple. Problems vary because of difference in human needs, backgrounds, economic conditions, races, religious beliefs, and others.

Have similar problems expressed themselves among peoples of earlier times? Records show they have, to varying degrees.

Students Prepared

Are you as students helping to increase the number and severity of problems, both near you and throughout the world? I sincerely believe that you are *not*. You are preparing yourselves to help balance some of the inequalities which exist. At present you are making your greatest

contribution by preparing well for the future. You are learning not only *how* to produce, by using the new technology, but you are learning *why*.

Later you will be able to apply this knowledge and build on your experiences for the benefit of mankind.

You have a rural or farm heritage. For this you can be proud, thankful and humble. From time immemorial farmers have been sturdy, vigorous defenders of democracy. Today most farmers of our country are well trained and educated. They are close to the natural elements and have positive, wholesome convictions which stand solid against radical, unsound points of view.

Much for You To Do

There is much to be done. It will always be so. Through your studies and other activities you are learning to make wise decisions, to understand other people and to communicate effectively. You will soon be in a very real position to help decrease conditions which cause such actions as "shutting off the water."

General Auto Repairs

Motor Tune-Up

SCHWERDT Motor Co.

1125 MORO

Al Schwerdt

Phone PR 8-4325

Manhattan, Kansas

SENIORS

Make Your Appointment Early

A PERFECT REMEMBRANCE

Your
Cap and Gown
Portrait

by

Studio Royal

1200 Moro

Dial 83434



Called Crown Gall

Tumor-like Disease Hits Kansas Plants

by Wilbur L. Wright

A DISEASE of plants that is often likened to a tumor growth in humans destroys roses, cherries, peaches, apples, raspberries, grapes and sugar beets in Kansas.

Called crown gall, it is caused by soil bacteria that are difficult to eradicate, and there's no known cure for the disease. Because it develops on roots, you must go below the soil's surface to diagnose the disease. Its symptoms—yellowing and spotting of leaves, leaves dropping off and branches dying—are the same symptoms that several leaf diseases cause and also can be caused by nutrient deficiency, lack of water uptake, freezing, and unfavorable climate.

Kansans have no corner on the disease. It plagues nurserymen and

people who grow fruit, vegetables, ornamentals, or home gardens in most countries of the world.

About 70 plants are susceptible to the bacteria that cause crown gall. The bacteria, known as the *Agrobacterium tumefaciens* to plant pathologists, are small, gram-negative rods that are closely related to both beneficial bacteria that produce root nodules on leguminous plants and to harmful bacteria of the colon-typhoid group.

Must Examine Roots

Professional plant pathologists are teaching county agents, home gardeners, nurserymen and others to examine roots and crowns of plants to diagnose the disease.

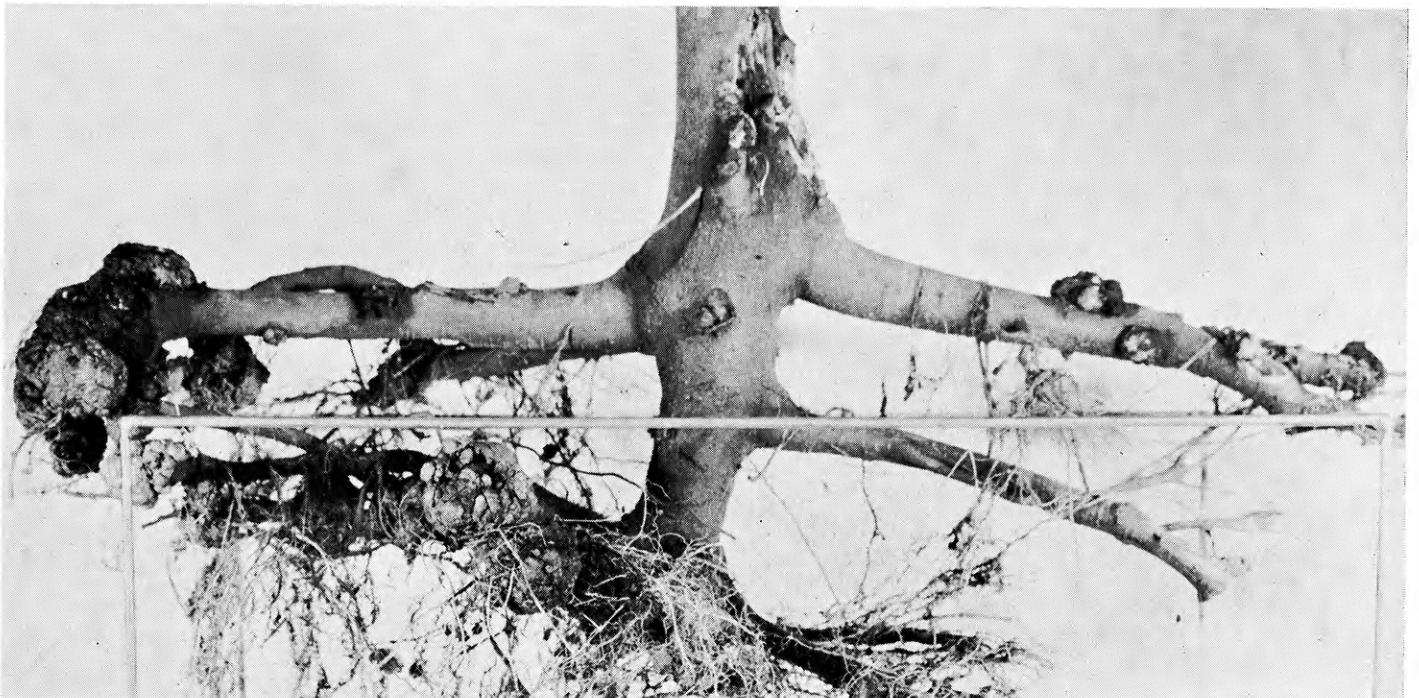


Crown gall, as shown at the bottom of the photo on a *Euonymus* root, resembles tumor growth in humans. It has no relation to any malignant growth in the animal world, so humans may handle diseased plants without fear.

Galls on roots are definite indicators of the disease, Dr. J. M. Kainski, K-State plant pathologist, says. Spherical galls on roots range

(Continued on page 10)

Large crown gall growth at left and smaller growths on root system of a Silver Maple tree supported by metal pipes. No cure for the disease, which is caused by bacteria, is yet known.





Apprentice Florist Mary Buell Seibert, Macksville, arranging a valentine window display for the College Floral Shop in Manhattan. Mrs. Seibert is a full-time employee of the shop as she fulfills her apprenticeship requirement in the two-year course. Her husband, Gale Seibert, also of Macksville, is a senior majoring in agricultural education at K-State.

Beauty, Art and Coeds

In The

by Lois Hudgins

THE K-State College of Agriculture has at least one almost purely feminine setting.

Sunshine streams through tall windows into the floral arrangement laboratory. Light picks up bright colors in flowers and ribbons and bounces over the shoulders of coeds concentrating on difficult arrangements.

Members of the floral arrangement class, one of the most important in K-State's unique two-year curriculum in retail floristry, are arranging flowers into beautiful corsages.

This one-time experimental course has become a solid training program for talented people who want to perfect a specific skill rather than

take a regular four-year course at a university, the professor explains.

Only Two Others

Only two other schools in the United States offer similar programs for students. They are the University of San Francisco and Michigan State University.

"The other universities also offer classes in regular horticulture, the growing of plants and more general subjects. We alone specialize in the retail aspect of floristry," said Dr. William J. Carpenter, Jr., who is in charge of the program.

The special short course was originated at the request of the Kansas State Florists Association. C. Peairs Wilson, then dean of resident instruction, set up an experimental course to start in September, 1961.

17 Now at KSU

Only seven students enrolled in the course four years ago. Now there are seventeen.

The main attraction of the program is a split subject matter emphasis. The first year is devoted to class work, and the second to an ap-

prentice program in which students actually work in selected flower shops. Over 400 florists in Kansas are co-operating with the University's short-course program on a regular basis and others can participate if they wish.

Serve As Apprentices

When the apprenticeship is completed, each student receives a certificate and he or she is ready to become a part of the billion-dollar-a-year floristry business.

If at all possible, apprentices choose the florist who later will provide a full-time job. According to Dr. Carpenter, if the selected florist is not on the list, special efforts are made to secure his cooperation.

Two girls in the present class would like to work in Hawaii during their last year in the course, Dr. Carpenter said.

"We do not limit the area in which a student may work, so I am now busy corresponding with florist shops in Hawaii, trying to find a position for these girls. Of course, we must be certain to line up a good, reputable florist. It does no one any good to work for a poor florist."



Janice Andres of Route 1, Newton, making corsages in the floral arrangement class in the College of Agriculture at Kansas State University in Manhattan. Janice is one of seventeen students in the special two-year course that requires one year on campus and one as an apprentice with a florist. Nearly all students who take the course get new jobs.



College of Agriculture

Most Find New Jobs

After receiving their certificates, most graduates find new jobs. Dr. Carpenter said that experience garnered in different shops makes good florists better. Graduates are encouraged to experiment in several areas, with shops specializing in different aspects, before settling for a permanent job.

Besides the floral arrangement class, students take required courses in English composition, speech and salesmanship. These give poise and confidence to the young neophytes. People with the ability to write and speak properly best meet the public and sell the product of the firm that hires.

Take Other Courses

Other courses emphasize art needed for arranging. Courses like elementary design, interior decorating and landscape gardening are included in the technical training curriculum. The business side is brought out in personal finance, credits and collections, small business operation and principles of accounting. All required courses call for two semesters

of work averaging seventeen hours of credit, plus a summer session, or a full calendar year.

One Course at Top

The floral arrangement class is considered the most important single course in the program. The once-a-week, three-hour laboratory gives basic principles the first semester. Students experiment with harmony, color and the mechanics of arranging. Most of their work deals with novelty and dried arrangements. During the spring, fresh flowers are used and the course becomes more complicated. More specialized study is concerned with "frenching" of flowers, and making corsages, wedding bouquets and displays, reception bouquets and funeral sprays.

Florists Help Teach

Professional florists visit the class regularly and provide up-to-date, on-the-spot information and working ideas from the floristry business. The classroom study combined with the apprentice program is providing a steady flow of new professional retail florists, Dr. Carpenter said.

- BOOKS
- BOOKS
- BOOKS
- BOOKS

Cultural Books
Text Books

Ted Varney's
**UNIVERSITY
BOOK STORE**

Your Friends with the
Green Sidewalks Nearest
the University

You Can Raise Your County's

IF KNOWLEDGE is strength, or if it is a good thing to go to college, readers of the Ag Student Magazine are among the most influential persons in Kansas. That's because influence and leadership travel horizontally among persons of the same age, interests, and economic conditions (peers). High school seniors and college freshmen probably will do more than any other age group in helping 1964 high school graduates decide whether to go to college and where to go. High school grads go to college because they have an idea of what college is like. They find out, first, from friends near their age and with their interests and, second, from reading letters, pamphlets, booklets, college catalogs, brochures, magazines, newspapers. They pay the most attention to what friends their age tell them. Their friends are easiest to talk to and to understand. That's the reason high school seniors and college freshmen can be more influential than high school principals, counselors, or other adults in helping a high school

senior make up his mind what he'll do after he graduates.

Parents' Ideas Important

Parents and relatives have a big influence because they help sons and daughters decide how valuable information (education) is.

Since the world becomes more complex and more technological each generation, each generation of parents tends to underestimate the value of formal education.

When the frontier was open and one could stake out a claim to land, start a new business—or even a new town—hard work, health, and honesty would take you well up the ladder of success. The same thing is still true, with one important exception. Machines are replacing muscular and tedious work, so the *hard work now needs to be on studies*, and learning must continue all through life. The more you know, the less likely you are to be replaced by a machine. Machines and knowledge already have largely replaced men who could

plow straight furrows, split logs, feed threshing machines, handle horses, mix concrete, or shovel wheat.

Must Learn More than Folks

Youth of today need a lot more knowledge than their parents did to be relatively certain that they will help build the machines of tomorrow and decide what the machines will do—rather than being replaced by them.



Preparing for a specific job is stressed too much as a reason to go to college. Dr. David Danskin's studies of K-State students show that most of them move into jobs that are only slightly related or entirely unrelated to their college majors.

Broad Learning Counts



General principles learned, broad understanding, ability to speak, to write, to meet people, and *to think* permit college-trained persons to move to various kinds of jobs—to take advantage of opportunities the future presents.

Dr. Danskin will tell you something else that most college profs never mention. And some of them even tell you just the opposite. Danskin says salaries of K-State graduates are not related to grades. Of course, you won't graduate if your grades do not meet certain standards. Each college has its probation and dismissal system, which parents, politics, and pressure seldom change.

Kansas as a whole beats the nation's average on percentage of high school graduates who go to college. Kansas' percentages for 1960-61-62 were 47.5, 49.6 and 52.0, so probably 54 to 56 percent of the 1964 Kansas

Serving
Manhattan
Since 
1928 
— Aggieville —

FOR PALM DRUG
REST ACE
ESTER'S



Standing

Learning to run complicated machines is a good way to keep from being replaced by them. These KSU students are operating computers that do mathematical work formerly considered impossible because of the time it took for humans to do the computations.



high school graduates will start to college next fall.

Averages Hide Extremes

Averages often hide wide variations. For example, the average salary of an executive and his gardener is \$25,500. The executive gets \$50,000; his gardener, \$1,000. Average percentages of high school graduates who go on to college from the 105 counties in Kansas do not vary so widely as the salaries just mentioned but percentages from the top counties are more than twice those from the bottom counties.

Southwest Kansas Highest

The map below shows how your county ranks in relation to others in Kansas. In general, southwestern Kansas sends the highest percentage of its high school graduates to col-

lege, while northeastern and eastern Kansas schools send the fewest on to college. But notice exceptions, like Johnson county on the east and Wichita county on the west. Generalizations about regions in Kansas, like averages, hide as many truths as they throw light on.

Many factors (that high school students seem to have little or no control over) influence the percentage that go on to college. Colleges and junior colleges in their home counties help, often by making it possible to live at home and go to college. But Kiowa, number 1 county, contains no college, while Highland Junior College is in Doniphan County, number 93.

Larger High Schools Favored

Larger high schools send a higher percentage of their grads to college.

In Kansas, schools with more than 1,000 students sent 59 percent to college, compared with 43 percent by those with fewer than 200 students.

Economists at the University who have seen the map below plan to rank the counties by per-household or per-person income to see if counties of high income send a higher percentage of their high school grads to college than those of low income. Accurate income figures are difficult, if not impossible, to obtain, but higher education is costly, despite being highly subsidized by tax funds.

Urge Friends to Give It a Try

In general, the more people know about education, the more highly they value it; so if you want to raise your county's standing, one of the best ways to do it is to urge your friends to give college a try.

How does your county rank? This map gives rank order of counties from 1 to 105 based on the percentage of high school graduates who went on to college in 1960-61-62. Kiowa, the number 1 county, sent 66 $\frac{2}{3}$ percent of its high school graduates on to college compared with 26 $\frac{2}{3}$ percent in Jackson county those three years. Counties given the same rank number averaged sending the same percentage of students on to college. See Johnson and Stanton which tied for 2nd and 3rd, or Washington, Pottawatomie, and Wabaunsee which tied for 99th, 100th and 101st.

In general, the highest percentage of high school graduates from southwestern Kansas go on to college, while the lowest percentages of eastern and northeastern Kansas high school graduates continue their education.

CHEYENNE	RAWLINS	DECATUR	NORTON	PHILLIPS	SMITH	JEWELL	REPUBLIC	WASHINGTON	MARSHALL	NEVADA	BROWN	DONIPHAN
11	35	70	53	87 $\frac{1}{2}$	77 $\frac{1}{2}$	90	70	100	103	94	67 $\frac{1}{2}$	93
THESEMAN	THOMAS	SHERIDAN	GRAMM	ROCKS	DEBOER	MITCHELL	CLOUD	CLAY	WYKE	POTTS	WATSON	JACKSON
39 $\frac{1}{2}$	33	45	29 $\frac{1}{2}$	48	83 $\frac{1}{2}$	77 $\frac{1}{2}$	59	81 $\frac{1}{2}$	91 $\frac{1}{2}$	100	105	73 $\frac{1}{2}$
WALLACE	LOGAN	ROVE	TRICO	ELLIS	RUSSELL	LINCOLN	OTTAWA	WAGONER	CHANDLER	OSAGE	DEFEVER	JEFFERSON
45	82	73 $\frac{1}{2}$	83 $\frac{1}{2}$	29 $\frac{1}{2}$	60 $\frac{1}{2}$	86	81	53	53	100	55	104
OREGON	WICHITA	SCOTT	LANE	NESS	HIGH	BARTON	ELLSWORTH	SALINE	WABAUWSEE	WAGONER	OSAGE	DOUGLASS
79 $\frac{1}{2}$	85	36 $\frac{1}{2}$	7 $\frac{1}{2}$	73 $\frac{1}{2}$	63	31	42 $\frac{1}{2}$	50 $\frac{1}{2}$	60 $\frac{1}{2}$	67 $\frac{1}{2}$	23	102
HAMILTON	SEASAY	SINIBY	ROCKMAN	PAWNEE	STAFFORD	RENO	WICHITA	WAGONER	MARION	CHASSA	60 $\frac{1}{2}$	23
45	18	4 $\frac{1}{2}$	12	16	13 $\frac{1}{2}$	9 $\frac{1}{2}$	33	24	53	60 $\frac{1}{2}$	23	76
STANTON	GRANT	BARRELL	FOARD	EDWARDS	27 $\frac{1}{2}$	PRATT	HARVEY	BUTLER	GREENWOOD	WAGONER	CLINTON	ROCKMAN
2 $\frac{1}{2}$	13 $\frac{1}{2}$	57	19	7 $\frac{1}{2}$	1	4 $\frac{1}{2}$	57	27 $\frac{1}{2}$	25	89	95	38
NORTON	STEVENS	NEVADA	READE	CLARK	COMANCHE	BARBER	WAGONER	WAGONER	WAGONER	79 $\frac{1}{2}$	50 $\frac{1}{2}$	48
41	15	36 $\frac{1}{2}$	21	6	21	65 $\frac{1}{2}$	42 $\frac{1}{2}$	48	21	39 $\frac{1}{2}$	17	73 $\frac{1}{2}$
												91

BAY SERVICE

TOM DUNN, MGR.

KLEPPER OIL COMPANY

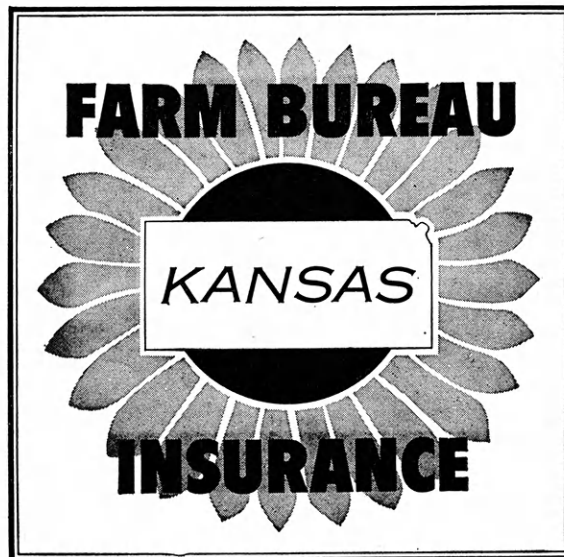
South End of 17th St. next to R&G Market

**Discount to All K-State Students, Faculty, Staff
and Employees**

We will cash your check!

Wash Your Own Car—25c

Use Our Vacuum **Free**



The Symbol of Security

With agents in all
Kansas Counties ready to
serve Kansas people.

**FARM BUREAU MUTUAL
KANSAS FARM LIFE
K F B**

Insurance Companies

HOME OFFICE

MANHATTAN, KANSAS

Tumor-like Disease Hits Kansas Plants

(Continued from page 5)

from ¼ inch to 2 or 3 feet in diameter, depending on the host plant. Generally, they are located where the plant emerges from the ground—at the plant's crown.

Young galls are soft and become harder as they age, particularly in woody plants. In herb-like plants the galls usually are softer. If you cut through a gall, you find a corky, spongy structure.

Bacteria Spread Easily

Usually crown gall bacteria are abundant in the soil near infected roots, and on the surface of galls. The bacteria may be washed off and spread by running water, agricultural implements, animals, and especially chewing insects, which carry them from plant to plant. The bacteria also travel in infected nursery stock.

"Even if plants were inspected before shipment, symptoms not evident then can develop later," Dr. Kainski points out. No inspection methods are known to prevent spreading the bacteria long distances, he said.

Crown gall bacteria enter root wounds caused by tillage implements, grafting, and insect injuries. Once inside an injured plant tissue, the bacteria find nutrients enough to grow, multiply, and cause surrounding cells to divide.

"Only certain tissues in plants have the ability to divide and multiply their cells rapidly," Dr. Kainski explained, "so growth becomes disorganized and galls are produced."

Some Plants Live

When crown gall infection is on a lateral or secondary root, infected plants often live but are more susceptible to damage by extreme temperatures, malnutrition, and other factors. If the gall grows too close to a plant stem or crown, the main conducting tissue is damaged and the plant may die suddenly, or it may survive for some time.

Wounds Never Heal

In the early stage, crown gall resembles a wound healing, but it never heals. Some tissue cells grow faster than others; this ruptures other tissues and disorganizes cellular growth.

In Kansas, the crown gall organism

is highly destructive of roses, cherries, peaches, apples, raspberries, grapes, and sugar beets. Also many shade trees and ornamentals such as euonymus, Chinese elm, maple, willow, poplar, juniper, and geranium have been infected, Kainski said. The disease kills many different trees in Kansas. It is quite common among peach trees after hard and severe winter weather in the Wichita area.

Burn Infected Plants

No control methods are known for an infected plant, so burning is recommended. Commercial fertilizer, especially nitrogen, normally will prolong the life of a valued but infected tree. Nitrogen does not decrease infection, but is a supplemental nutrient substituting for roots damaged by galls.

Sulfur applied to the soil helps reduce soil bacteria to some degree. Home owners might use sulfur on diseased roses or raspberries, but commercial growers must destroy infected plants, according to Dr. Kainski.

Grasses Not Affected

The bacteria can remain in fallow soil over two years, and persist indefinitely on volunteer and cultivated susceptible plants. Apparently, crown gall infects only broad-leaved plants, not grasses.

The bacteria are favored by moisture and alkaline soil.

In areas where crop rotations are impossible because of perennial production, damage is more severe, since the plant's life span is longer. Bacteria thrive and multiply as long as an infected plant survives. In annual crops, rotations with immune species and a short growing season will prevent bacterial population build-up.

Nurserymen should disinfect all tools and equipment used in contaminated areas, and treat the soil in nursery beds.

No Human Worries

Crown gall growth in many instances closely resembles malignant tumor growth in animals and humans; however, the crown gall organism will not cause tumor growth in humans. It has no relation to any malignant growth in the animal world. No one needs to be afraid to handle plant crown gall infected and diseased material. You can do it safely with no worries, Dr. Kainski said.



The service we sell is

Keeping You Handsome

JUNIOR'S BARBERSHOP

East Moro in Aggieville

TIME OUT

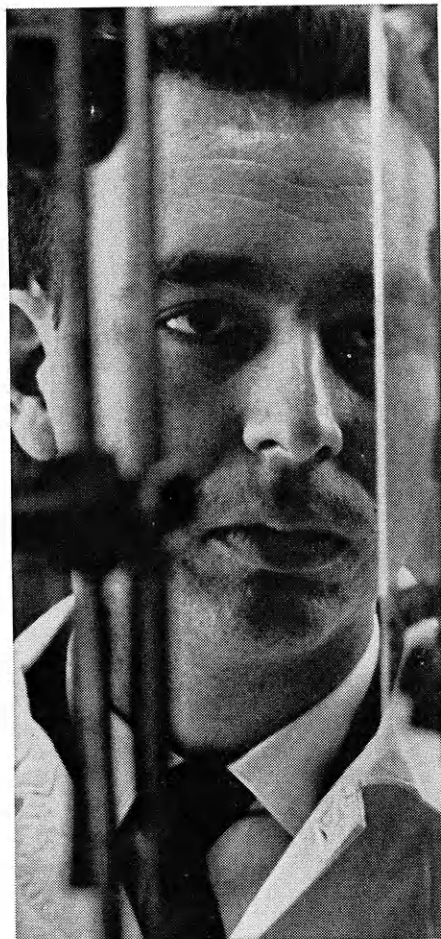
Across from KITE'S

IN AGGIEVILLE



For **FREE** List of KANSAS CERTIFIED SEED Producers Contact

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



Our gasoline isn't good enough for some people... us

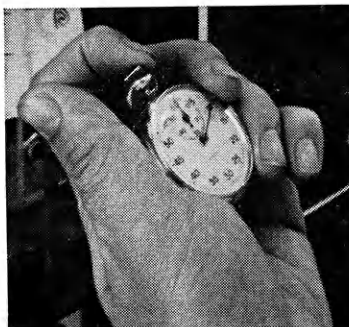
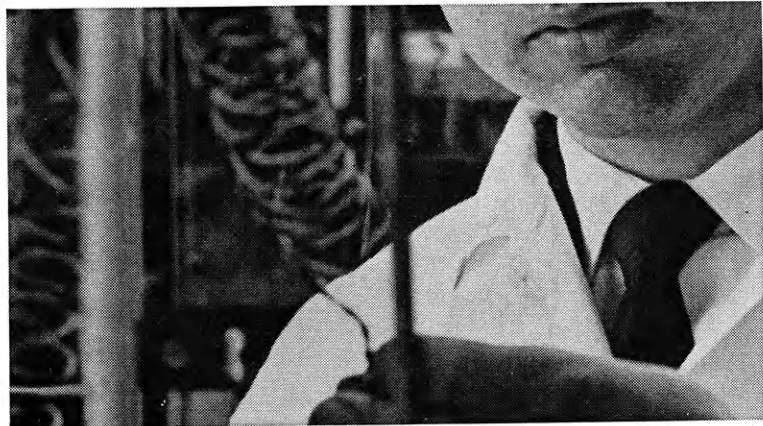
We like to think that American Oil products are the best you can buy. And they are. We also like to think we can improve the quality of our products without increasing the cost to the consumer. And we do. Consistently.

A considerable amount of work is done in testing catalysts and searching for those which will help produce the types of gasoline our customers want at the price they can afford.

One of the people engaged in the research and development of our manufacturing processes is John Mitchell, 24, a graduate Chemical Engineer from the University of Texas.

The opportunities for bright young scientists like John Mitchell are virtually unlimited at American Oil. American Oil offers a wide range of new research opportunities for: Chemists—analytical, electrochemical, physical, and organic; Engineers—chemical, mechanical, and metallurgical; Masters in Business Administration with an engineering (preferably chemical) or science background; Mathematicians; Physicists.

For complete information about interesting careers in the Research and Development Department, write: J. H. Strange, American Oil Company, P. O. Box 431, Whiting, Indiana.



IN ADDITION TO FAR-REACHING PROGRAMS INVOLVING FUELS, LUBRICANTS AND PETROCHEMICALS, AMERICAN OIL AND ITS AFFILIATE, AMOCO CHEMICALS, ARE ENGAGED IN SUCH DIVERSIFIED RESEARCH AND DEVELOPMENT PROJECTS AS:

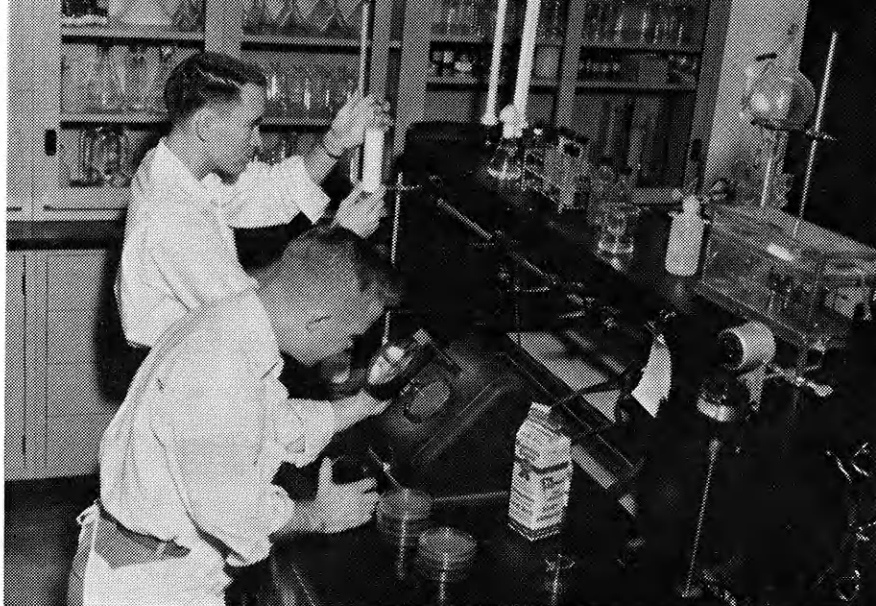
Organic ions under electron impact ● Radiation-induced reactions ● Physicochemical nature of catalysts ● Fuel cells ● Novel separations by gas chromatography ● Application of computers to complex technical problems ● Synthesis and potential applications for aromatic acids ● Combustion phenomena ● Design and economics: new uses for present products, new products, new processes ● Corrosion mechanisms ● Development of new types of surface coatings.



**STANDARD OIL DIVISION
AMERICAN OIL COMPANY**

Dairy manufacturing studies at Kansas State led Paul Vincent (standing) of Manhattan to a position in the Quality Control Laboratory of Safeway Stores in Kansas City. Joe Mink came to K-State from Scarsdale, N.Y., studied dairy manufacturing and returned to work for the Borden Company in New York City.

"Agriculture" and "Farming" Are No Longer Synonymous



Ag Related Opportunities Abound

by Darrell Garner

IF YOU want a rewarding, well-paid job, don't overlook the possibilities in agriculture.

Here's how to stake one of these promising jobs out as your own. Take a college preparatory course in high school, develop an interest in agriculture and related industries, and obtain a good college education.

The principles you learn in college will apply to many area jobs so you will have what Dean Duane Acker calls mobility. That is, you can move up the job ladder and you can move geographically—even to foreign agricultural jobs.

The dean and many college profs also warn that too much importance is placed on jobs that education leads one into; they almost unanimously agree that students should study in the area that interests them and that is the area where they are most likely to excel.

You can make a good living doing what you like to do, so study the area where your interests and aptitudes lead you, they say. You'll be a better citizen and do more for your community, state, and nation when you are happy at your work.

Changes Create Jobs

Excellent job opportunities have resulted from changes in American agriculture. In the past few decades, and particularly since World War II,

more and more of the agricultural services have been provided by business firms associated with farming. And it is the agribusiness or agri-industry sector that offers some of the best jobs for college graduates. Today's agriculture includes not only farming but the agribusiness firms engaged in supplying the farmer, and processing, distributing, and marketing farm products.

Young men and women with rural backgrounds and with an interest in outdoor work can profit from this development. Farmers and agribusiness firms employ two of every five American workers. This huge and varied industry offers virtually unlimited opportunities for people who prepare to work in those areas.

Many of the agribusiness or agri-industry jobs are going to college graduates from cities because graduates with farm backgrounds are not available. When agribusinesses or agri-industries need young persons with technical knowledge, they take what is available—often when they'd prefer one with both the technical knowledge and an agricultural background.

Salesmen of many companies now must have a college degree to be considered for a job. They need wide knowledge and technical training to serve the company's customers. For example, one needs to know soil types, plant nutrients and their interrelations to sell fertilizers intelligently. Without that kind of knowl-

edge, salesmen may sell fertilizer elements not needed. That kind of business is good for neither the farmer nor the company.

One of the brightest factors in the employment picture results from the many types of firms in agriculture. You can get a research or sales position in some of the largest companies in America. These companies want well-trained people with rural backgrounds.

Many small businesses need college-trained men for management and to handle other technical jobs, such as manufacturing ice cream or dehydrating fruits, vegetables or other foods. Banks need employees who understand farming, ranching, credit.

Urban Agriculture Needs Grads

Swiftly expanding suburban areas are crying for people trained in landscaping, small plant culture, park maintenance and related work. The list could go on and on in areas that need people trained in agricultural and related fields. The important thing to remember is that these jobs do exist. You can land one of them, if you are willing to prepare for them.

Remember that, even if you are poor, you *can* put yourself through college. It is a rocky road but the rewards are worth the effort.

In planning your career remember that agriculture employs two of every five American workers. Seize the opportunity by starting to make preparations now.



Science Has Replaced Horseplay and the Horse Tank in the College of Agriculture

MANY alumni and quite a few profs can recall—quite often fondly—episodes centered around the horse tank at Kansas State University. For years, it was the center of Ag Week activities. Ag students who did not wear red bandanas during the week and (theoretically but seldom actually) ag girls who did not wear gingham dresses were doused in the tankful of water.

The tank seemed to weld the ag school students together, create *esprit de corps*, and was a natural for newspaper writers and photographers. But ag students who enforced the regulation did little studying or sleeping during the week. Chemists

from what the ag students called the College of Arts and Parties easily discolored, with nearby chemical supplies, the water, and students in the College of Veterinary Medicine often succeeded in chopping a hole in the tank. To successfully defend the tank, it took about two dozen ag students at a time on shifts that went 24 hours a day all week.

Students working on exhibits and those grooming and training animals for Ag Science Day and the Little American Royal livestock show this spring say it still takes as much time from studies to prepare exhibits but they grant that their '64 activities are more educational and less explosive.

Primary purpose of Ag Science Day is to show the public, particularly high school students who may be thinking of attending college, how scientific agriculture has become, how many opportunities it offers in various fields, and how far wrong the person is who thinks "agriculture" and "farming" are synonymous.

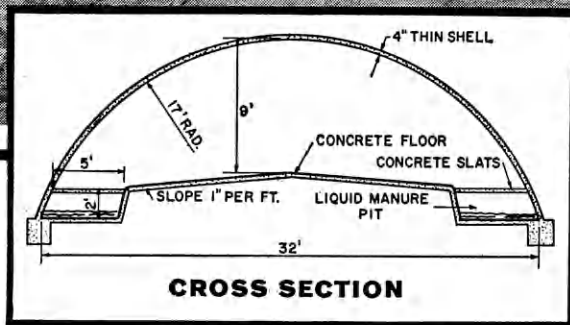
So the entire family can attend, Ag Science Day, the Little American Royal, and Home Economics Hospitality Day all are scheduled for the same day. Plan now to attend. It's both educational and entertaining and no one would think of throwing you in a horse tank, regardless of how you dress for the occasion.

APRIL 11, 1964

at

KANSAS STATE UNIVERSITY
MANHATTAN

! Engineering makes it possible !



Concrete thin-shell hog house under construction showing (left to right) plywood forms, polystyrene insulation and reinforcing bars.

New low-cost hog building achieved with thin-shell concrete

One of the latest developments in the farm building field is this thin-shell hog house built recently at Cozad, Nebraska. This 32- x 60-ft. structure has a 300-head capacity, and cost just \$2.50 per sq. ft. including concrete floor and slats.

The shell is only 4 inches thick—reinforced with steel and insulated with expanded polystyrene. The end panels are precast tilt-up concrete. For future expansion, they can be removed or left in place as partitions. The interior

combines a concrete floor with precast concrete slats over liquid manure pits, as shown in the cross section.

Engineering design and development are today providing more and more ways in which versatile concrete helps improve modern farm operations. To be of maximum help to farmers, keep up to date on the latest concrete construction methods in your area. And watch for more of these reports on the latest advances in concrete farm structures.

Portland Cement Association

811 Home Savings Building, Kansas City, Missouri 64106

An organization to improve and extend the uses of concrete

Prepare for a Future in *Scientific Agriculture or Agribusiness* K-State Opens Doors to Success

Waters Hall is one of the College of Agriculture centers of learning at Kansas State University, from which will come tomorrow's leaders in businesses related to agriculture as well as agriculture.

These young men will be machinery dealers, formula feed dealers, managers of dairy manufacturing plants and bakeries, agricultural representatives of banks, specialists in foreign agricultural positions, teachers, researcher scientists, extension agents, soil conservation men, feed dealers, seed dealers, fertilizer dealers, farmers, ranchers, livestock commission men, vocational agriculture teachers, and junior executives and administrators.

The U.S. Census Bureau figures show that a college graduate earns considerably more than \$100,000 more in a lifetime than a high school graduate, but the extra income is not the most important reason to go to college.

The College of Agriculture's professors and deans want their young people to emerge with broad educational training that fits them for responsibilities in community life, government and industry.

*Plan to be one of them and
To go forward as one of them*



THE COLLEGE OF AGRICULTURE

Manhattan, Kansas

