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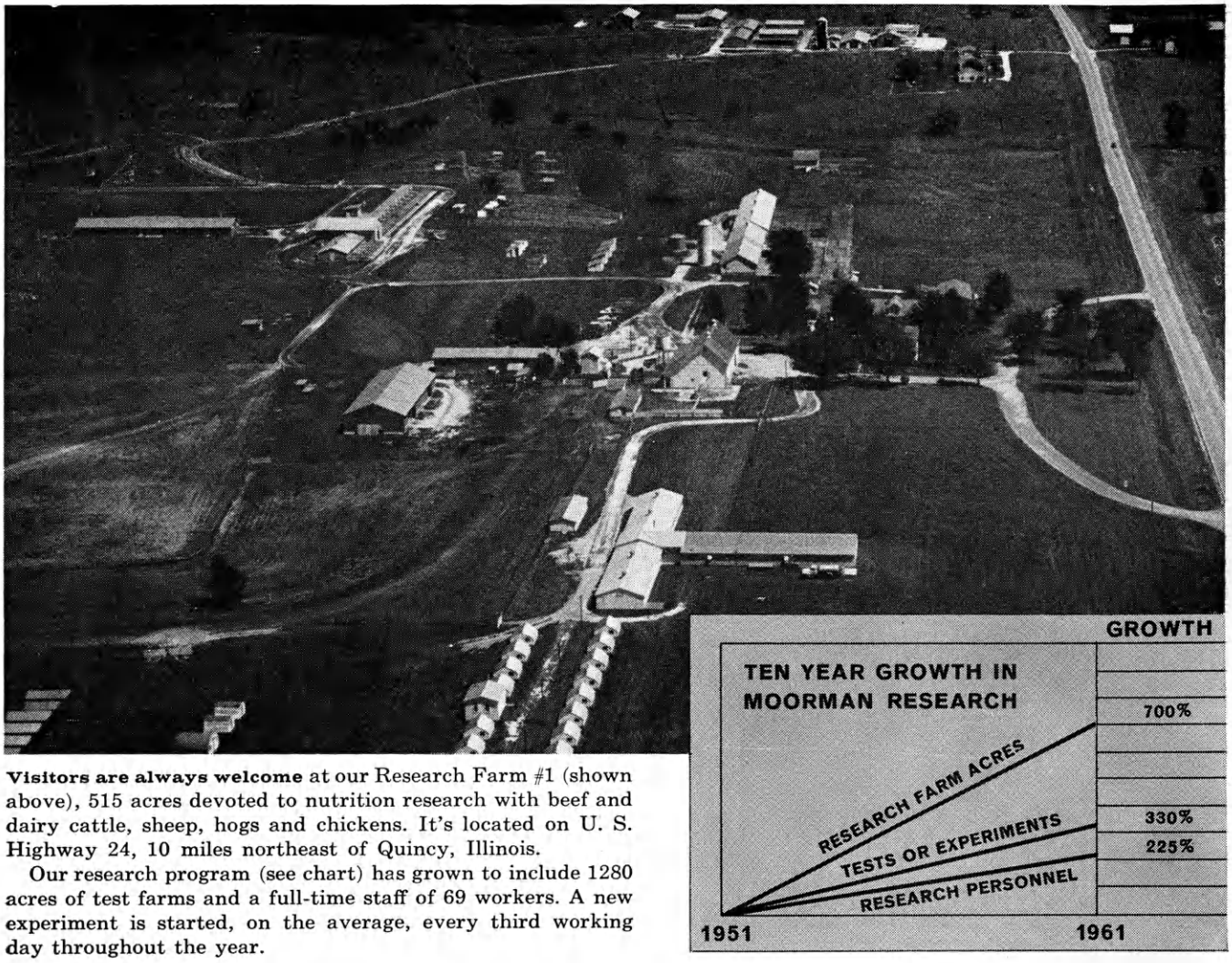
KANSAS STATE UNIVERSITY

AG STUDENT

Deceptive Packages Fool Shoppers . . page 10



Visitors are always welcome at our Research Farm #1 (shown above), 515 acres devoted to nutrition research with beef and dairy cattle, sheep, hogs and chickens. It's located on U. S. Highway 24, 10 miles northeast of Quincy, Illinois.

Our research program (see chart) has grown to include 1280 acres of test farms and a full-time staff of 69 workers. A new experiment is started, on the average, every third working day throughout the year.

MoorMan Research grows to help lower feeding costs

Guesswork seldom produces low-cost meat, milk and eggs. Nor does the "eye of the master" alone do the job.

Livestock nutrition is too complex—and becomes more so every day—to progress on simple guesstimates.

Today, it takes research—the deep-digging, practical kind that goes into MoorMan's Mintrates*, Minerals and Parasite Control Products.

That's why research is a vital, fast-growing part of our business.

Starts in the lab, ends in the field

At MoorMan's, research has just one question to answer: How can we help livestock and poultry convert home-grown grains and roughage into meat, milk and eggs at the lowest possible feed cost per unit of production?

The search for the answer always starts in our modern Research Laboratories. It continues in the pens and feedlots on our three Research Farms that total 1,280 acres.

Finally, each new product, or improvement, must prove itself through our Field Research Program and in actual use on dozens of cooperating farms or ranches.

Good Results are the end product

After a MoorMan Product is approved for distribution to cost-conscious farmers and ranchers, Research constantly checks and analyzes incoming ingredients and finished product. This helps assure consistently high-quality products and good feeding results.

Ever increasing research, more and more animals on test with constantly expanding facilities, are just some of the ingredients which back up the quality in MoorMan Products, even though they cannot be shown on the feed tag.

But they do show in the Good Results that MoorMan customers report: Thrifty, well-conditioned livestock, efficient conversion of home-grown grains and roughages to meat, milk and eggs at lowest possible cost.

MoorMan's*

Since 1885

Good Results Through Research and Service

MOORMAN MFG. CO., QUINCY, ILL.

*Trademark Reg. U.S. Pat. Off.

KANSAS STATE UNIVERSITY

AG STUDENT

Vol. XXXIX February 1963 No. 3

100 YEARS OF SERVICE TO KANSAS, THE NATION AND THE WORLD

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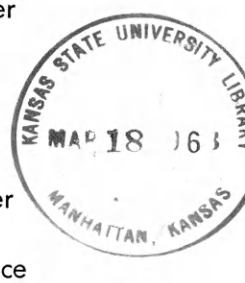
COVER: Some 7,500 "silent salesmen" on store shelves confront shoppers every time they visit a modern supermarket. In 10 years, more than 20,000 of these "salesmen" will be trying to sell their products. Mrs. Ronald Batchman hesitates as she tries to decide which product would be the best buy.



Departments Combine Efforts; Produce Three Major Events

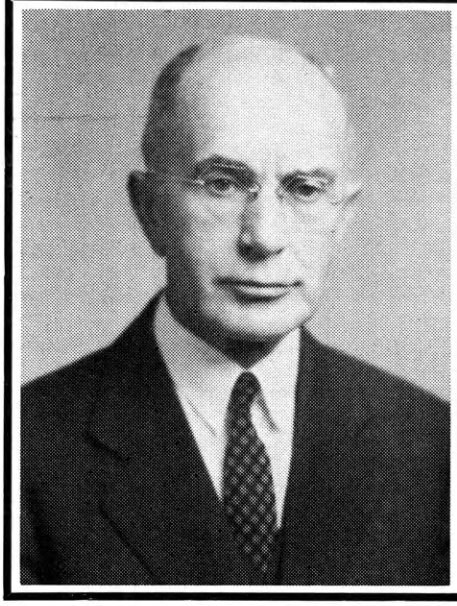
Departments in the schools of Home Economics and Agriculture will combine their efforts again this year to produce Home Economics Hospitality Day, Ag Science Day and the Little American Royal. These three events will take place Saturday, March 30.

"Home Ec Count Down" has been selected as the theme for Hospitality Day. Originating in 1931 as Hospitality Week, Hospitality Day was designed to interpret home economics to high school students as it was taught at the college. Purpose is still essentially the same.

All exhibits for Ag Science Day will be centered around the theme "After a Century—Professional Agriculture." Purpose of the event, which has been held annually since 1929 with the exception of the war years, is to make known the opportunities available in K-State's School of Agriculture. The program is especially designed to interest and inform high school seniors.

Ending the day's events will be the Little American Royal (LAR) which, like Ag Science Day, has been an annual event since 1929. LAR, a fitting and showing contest sponsored by the K-State Block and Bridle club and the K-State Dairy club, will be held in the Animal Industries building.

Students participating in the event are judged on their showmanship abilities and the fitness of their animals. Following decisions made by qualified judges, trophies will be presented to winners in the various divisions.



Francis D. Farrell was dean of K-State's Division of Agriculture and director of the Kansas Experiment Station from 1918-1925. In 1925 he became president of Kansas State College and served for 18 years, longest term in the history of the University. He was named President Emeritus on July 1, 1943. He contends, "Next to church, 4-H is the best thing for farm youth."

Former Dean Describes

Agriculture Now, 40 Years Ago

by F. D. Farrell

WHEN I came to Kansas State on September 1, 1918, we were in the thick of World War I. This fact influenced, to some extent, both the agriculture of the state and the agricultural activities of the college. "Food will win the war" was a statement frequently heard and read. It gave emphasis to both food production and agricultural teaching. Several teachers and scores of students left the campus to engage in war work of various kinds. Since then there have been many changes, some of which are mentioned below.

Fewer Farms, Larger in Size

First, changes in farming. Farms in Kansas have become fewer in number and larger in size. Kansas has at least 50,000 fewer farms than she had 40 years ago, and they are correspondingly larger. In 1960 the average farm size was 452 acres.

Second, Kansas farming has become highly mechanized. There are now many Kansas farms that do not have a horse or a mule. They use tractors and many kinds of tractor-drawn machines instead.

Third, Kansas farms have become extensively electrified. In 1924 there were only 900 electrified farms in the state. Now, virtually all farms are electrified.

Fourth, Kansas farmers by the thousands have attended college, where they learned a good deal about science. As a result, Kansas farmers make extensive use of science in their dealing with soils, plants and animals.

Farm Organizations Are Many

Kansas farmers now are members of farm organizations, some of which —as the Farm Bureau—did not exist 45 years ago. In Kansas that organization now has about 75,000 members in all the state's 105 counties. Then there are numerous special organizations, such as livestock associations and bee-keepers' organizations, and such general organizations as the Grange and the Farmers Union.

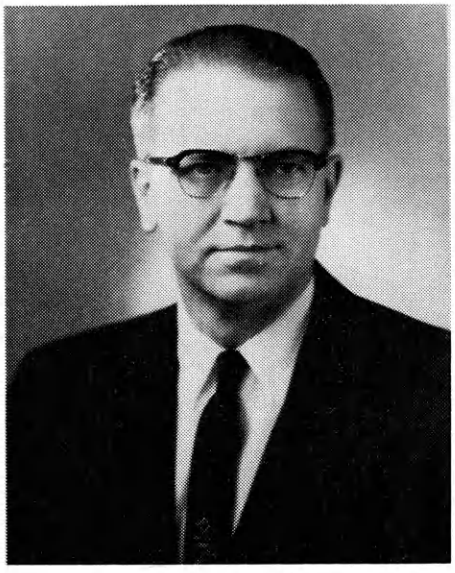
There have been many changes in farm leadership and in agricultural scientific personnel. J. C. Mohler, for many years secretary of the State Board of Agriculture, died several years ago. Former heads of agricultural departments at Kansas State no longer are active, because of death or resignation. These include such well-remembered department heads as McCampbell in animal husbandry, Fitch in dairy husbandry, Lippincott in poultry husbandry, and Dickens in horticulture.

Extension Service Brings Changes

One of the significant changes is the vast development of the Kansas State University Extension Service. That service, only barely started in 1918, now has a large staff of specialists stationed at Manhattan and more than 200 agents stationed in Kansas counties. Each county has an agricultural agent and, in addition, many counties have home economics agents and 4-H club agents. This development doubtless accounts for many of the changes in Kansas agriculture and rural life since 1918.

The above are a few of the important changes in Kansas agriculture in the past 40-odd years.

Education Changes To Meet Challenge



Glenn H. Beck
Dean of Agriculture

by Glenn H. Beck

IN KEEPING with the tradition that Land-Grant Universities are not ivory tower institutions, Kansas State's educational program in agriculture is geared to serving all the needs of Kansas people.

The needs are vastly different today from those in the first 75-80 years in the history of Kansas State University. Our educational base has been broadened from one that was primarily *production*-oriented to one that includes an agricultural complex of services like farm credit, farm management, soil conservation, fertilizers, formula feeds, storage, grading, processing, packaging, merchandising and distributing.

The clientele that Land-Grant Colleges serve is more widely distributed and larger today than ever before. The first segment includes about 7,000,000 people in the United States now employed on farms. This segment has been declining and can be expected to decline further. The second segment represents industries that furnish supplies and services to farmers and employ more than 6,000,000 people in the United States. The third segment includes industries and commercial enterprises involved in marketing farm products. It employs more than 10,000,000 people. The last two segments can be expected to increase. All together the three groups employ about 37 per cent of all persons employed in the United States. More than one-third of all people employed in the United States are working in the field of agriculture. Land-Grant Colleges now must provide training in these three segments.

Unfortunately, the decline in farm population has created a false public impression that opportunities for farm youth to remain in agriculture are narrowly limited. Actually, there are more opportunities and a wider variety of career choices in agriculture today than ever before. For example, here is a January, 1963, breakdown of *major* fields of study of *undergraduate* students at K-State:

General Agriculture, 42; Agricultural Economics, 113; Agronomy, 62; Animal Husbandry, 180; Dairy Science, 21; Entomology, 4; Horticulture, 22; Poultry Science, 3; Ag. Mechanization, 2; Ag. Journalism, 5; Agricultural Education, 85; Dairy Manufacturing, 5; Feed Technology, 68; Floriculture (2 years), 11; Landscape Architecture, 40; Milling Technology, 45; a total of 708 students in 16 areas of agriculture.

Many Choices for Ag Graduates

It shows two things: the wide variation in interests of ag students, and tremendous opportunities for future students. Almost without exception, graduates in the fields with the fewest majors listed have the widest choice of professional opportunities. Industries allied with the fields with few majoring students now compete for students who have minors in those fields.

This changing concept of agriculture has brought about changes in our curricula at K-State and other Land-Grant Colleges — changes in course content and changes in methods of teaching. Curricula have been shifted significantly to permit more training in business, mathematics, basic sciences and liberal arts. The general curriculum in agriculture at Kansas State is flexible enough to allow students, through appropriate choice of electives, to specialize in a wide variety of interests. Also, new curricula have been added in such areas as feed technology and landscape architecture, and others are being considered to meet changing needs of Kansas youth.

Courses Changed to Meet Needs

Courses have been streamlined and combined to avoid unnecessary duplication. Our current teaching puts greater emphasis on fundamentals and principles and less emphasis on applied training.

Not too many years ago we concerned ourselves almost entirely with training agricultural students in what seemed to be well-established production techniques. Now we realize that our students must be prepared for a dynamic industry where well-established techniques of today give way quickly to new innovations. Kansas State's School of Agriculture faculty recognizes that the University must accept the challenge of training students to live in a world of rapidly changing conditions.

The K-State campus of 1885 had only a few buildings. Anderson Hall (in the background) is one of those still standing.

Despite Humble Start

KSU Now Internationally Known

by Thayne Cozart

PICTURE for yourself a small agricultural college with 52 students and a handful of professors. Add 100 acres of land, 11 cattle, 11 pigs and 10 chickens to this, and you have Kansas State University nearly 100 years ago.

K-State's life began when Kansas accepted the provisions of the Morrill Act, passed by Congress in 1862. The bill stipulated that a land-grant college be established in each state. Nearly 90,000 acres of land were set aside in Kansas for that purpose. Funds for operating expenses were to be raised through sale of these lands and investment of the money in state or federal bonds at five per cent interest or more. The act stated also that capital from the land sales be invested and only money returned in interest could be spent for improvements.

After Kansas accepted the Morrill Act, founders of Bluemont Central College, Manhattan — which consisted of one stone building, a library and some apparatus—deeded all land and improvements to the state college. Twenty-six men and an equal number of women enrolled for K-State's first school term in September 1863.

Research Is Duty of K-State

Faculty members immediately realized that agricultural research was not only a proper function, but a duty of the institution. They realized also that Kansans, many of whom knew little about farming, would need instruction and guidance in proper farming practices. In addition, they knew that new types of crops and livestock, suitable and profitable in Kansas, would be needed. The faculty designed a program to meet these requirements and immediately put it into effect; it was on a limited basis, though, because of insufficient funds.

Land, Facilities Added

Gradually, more land and facilities were acquired. Ten years after the college's start, 215 acres of land were added, which include the present campus site. In 1873 the first livestock other than horses was purchased. The forerunners of today's herds and flocks were four breeds of purebred cattle, three grade steers, a grade nurse cow; four breeds of purebred pigs; and three breeds of chickens. The livestock and poultry were purchased for $4,322.

A co-educational college from the start, K-State developed a curriculum in home economics. Early graduates

in this field were influential in establishing home economics curricula in other schools. Veterinary medicine developed simultaneously with the departments of agriculture and home economics.

Agricultural research before 1887 at K-State was simple but practical, designed to gain information useful to early settlers. Agronomic investigators studied adaptation of different crops to the climatic conditions of the region. Other work included variety tests of important crop plants, tillage tests, fertilizer experiments and crop sequence studies.

First Experiments on Swine

Earliest livestock experiments dealt with feeding whole milk to swine. Later tests determined weight gains of swine under indoor and outdoor conditions. Offspring of the thriving college livestock were sold to Kansas farmers.

Farming department, one of three college departments, controlled all agricultural activities. It supervised experiments, decided upon improvements and kept records.

Although improvements in agricultural facilities were slight before 1887, they were significant. Two stone barns were erected, horticultural facilities were built, and an orchard, shelterbelts and fields of improved grasses were planted. An experimental piggery was built, as was a chemistry building.

Farmers' Institutes blazed the trail for K-State's extension work. These meetings, conducted throughout the state, allowed faculty members to tell Kansas farmers the results of the college's experiments, and to advise them on new developments. Later the college made an agreement with the railroads and special trains were provided for displaying the college's demonstrations and experiments. This extension program, the Railroad Institutes, was highly successful.

Establishment of an agricultural experiment station was provided for by the Hatch Act of 1887. Purpose of the station according to the Act was "to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." K-State received $15,000 annually for the establishment and maintenance of the station.

Extension Promoted by 1914 Act

Vigorous expansion of the experiment station occurred in the early 1900's. In 1901 the Fort Hays branch station — 3,560 acres — was established. The Garden City branch was set up in 1906, with the Tribune and Colby branches being started in 1911 and 1913, respectively. Other branches have since been added.

Co-operative extension was promoted in 1914 by the Smith-Lever Act. Distribution of bulletins, circulars and pamphlets became more efficient with the passing of this Act. The Engineering Experiment Station was added to the extension program in 1910. Soon after, nearly every county in the state had a K-State-educated county agent to assist farmers.

K-State Had Only 3 Departments

K-State's development has initiated as many changes in curriculum as it has in facilities. In the beginning there were only three departments—farmers, mechanics and women's. As more facilities were added, the curricula accordingly became more complex. The Department of Agriculture changed to the Division of Agriculture, then to the School of Agriculture, and just recently to the College of Agriculture. During this changing process, K-State, itself, became a University in 1959.

Today the College of Agriculture is extremely complex with three divisions—the School of Agriculture, the Division of Extension and the Experiment Station. Degrees are offered in every phase of agricultural work and study. K-State is the only school in the world which offers degrees in Milling Technology and Feed Technology.

Aims of the College of Agriculture today are basically the same as they originally were, the only difference being K-State's ability to do a better job. Helping the people of Kansas, the United States and the world is still the prime objective.

Waters Hall, situated at the north end of the campus, is the home of deans' offices and many agricultural departments.

Do You Lack Money For a College Education?

Many Summer, Campus Jobs Help Defray Expenses

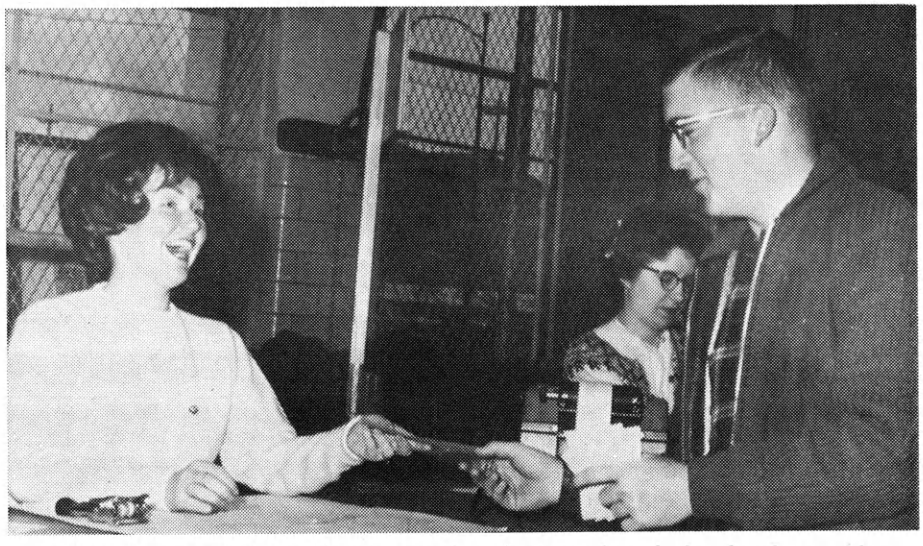
by Tom Kay

EVERY year students of outstanding ability are ending their formal education with the acquisition of their high school diploma or one to two years of college simply because they feel that they lack the means of financing a college education. Maybe you find yourself in this situation. If you do, then you are selling your capabilities short and overlooking the ways in which thousands of students make it possible to continue their education regardless of their financial difficulties.

Desire for Education Important

"Don't let anyone tell you that you cannot make it through college," exclaims Paul Deets, a junior in agricultural education from Abilene. "If you desire higher education and are willing to work, you can make it through any college both financially and scholastically."

Deets estimates his average yearly cost of attending college at $1,250 and he is able to earn one half of this during summer vacation by working in a grain elevator and laying cable for an electrical company. About 15 per cent of his college expenses are paid for from returns on projects and investments that he started in high school. The remaining 35 per cent of his educational expense is earned throughout the school year. He works an average of twelve hours each week, thus making



College fees aren't impossible to pay if students work and plan for them early.

it possible for him to finance his own education.

Guitar playing and folk singing are the partial sources of funds needed to meet college expenses for Galen Slifer, a junior in general agriculture from Abbyville. He is a member of the "Bluemont Singers," popular quartet on the Kansas State campus that specializes in folk music. In addition, he works an average of twenty-five hours each week which enables him to adequately meet college expenses. This coming summer, Slifer plans to travel with the Bluemont Singers to finance his education next fall.

Start Saving Money Early

Larry Justice, senior in feed technology from Shawnee Mission, earns more than enough in the summer to pay expenses for the coming year, which he estimates at $1,300. He works for Continental Grain in its laboratory, running tests on wheat to determine protein content, germination, sedimentation, and insect infestation. With this job he clears about $1,100. Justice also has his own farming enterprise of 100 acres. The proceeds from this project amply provide the necessary $200 to balance his budget. He suggests that students "start early. It's a lot easier. And high school age isn't too soon to begin earning and saving money for college."

Use Crop Profits for School

"I know boys besides myself who plant 20 to 50 acres of grain crops each year and apply the profits to their college funds," says Neil Dowlin, a senior in agricultural journalism. "In my case, a retired friend of the family rented me 18 acres of ground which yielded about $300 as my yearly share. Additional summer wages of $400 gave me $700 earned outside of school. Of the remaining $500, I figure $350 came from part-time work each year and the rest from my parents."

Some students who are extremely short of cash work at dormitories during the week and then work elsewhere for three to eight hours each Saturday. This saves them about $450 yearly for food and earns them from $3 to $8 a week.

Investments, Scholarships Help

"Where there's a will, there's a way," is Larry Erpelding's answer to those students who feel that college creates more financial burden than they can handle. He is a sophomore in agricultural education from Atchison. "There are many students in poor financial condition who have paid their way through college by summer employment, part-time jobs and scholarships during the school year," he points out. Erpelding works summers for the state government measuring cropland where he earns about 60 per cent of the $1,100 he spends annually for his college education. The remaining $440 comes from investments and scholarships. He believes that working your way through school increases your appreciation of an education, thus making you a more conscientious student.

Average Expense Is $1,300

Kansas State University students can expect an average yearly expense of $1,300. However, the money-conscious individual could easily lower this to $1,100 to $1,200. The national average summer wage for college men is $500 and an additional $300 can be earned throughout the school year. For most students this leaves a maximum of $400 to be acquired by any of the following means: (1) From your parents, (2) More work in the summer and during the year, (3) Scholarships, or (4) Loan funds.

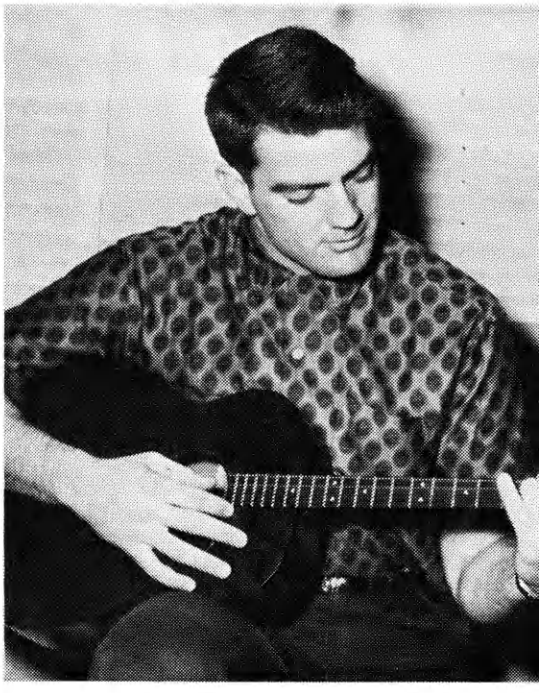
If you are in need of financial aid to carry on your education, acquaint yourself with the program of financial aids and awards at Kansas State University. This includes scholarships, loans, and part-time employment for those qualified students who need financial assistance to attend college. It is the purpose of these funds to supplement what the parents are able to contribute plus what the student is able to earn.

Education May Increase Income

With an increasing number of scholarships, loan funds, and part-time jobs, the capable student can no longer be denied a college education because he lacks finances. Instead, we see that the person who is willing to sacrifice a little time can work his way through college. If you believe that you cannot afford to go to college, consider this: A college education is estimated to increase your total life's earnings $100,000 to $250,000. When this education costs you only $5,000 to $6,000, you cannot afford to pass it up.

Some students have taken jobs in kitchens to earn money for fees, room and board.

Guitar playing and folk singing help one student to finance his college education.



'Silent Salesmen' Compete For Store Shelf Space

Deceptive Devices Fool Unwary

by Andrea Torrence

SHOPPERS, beware! You are being deceived by "silent salesmen" who are hiding on store shelves. In the form of packages, these "silent salesmen" tell you only what manufacturers think you should know. This may be in an honest or satisfactory way, but far too many packages are deceptive and misleading.

"Deceptive packaging is a problem all over the world," emphasized Dr. Richard L. D. Morse, professor and head of the Department of Family Economics at Kansas State University and a member of President Kennedy's Consumer Advisory Council. "In these days of the self-service store and the supermarket, the package has largely taken the place of the shop assistant. Instead of the family grocer's advice, you now have to rely on these 'silent salesmen,' who usually have a well-thought-out line of sales talk planned to get you to buy the product."

Watch for These Devices

Deceptive devices you need to watch out for include glass jars that are molded with raised tops, thick walls, excessive height, indented bottoms and irregular or magnifying shapes; wood, cardboard and metal boxes that may be excessively large and slack-filled, or may contain false or indented bottoms or raised covers.

Even little children are in danger of being fooled by the manufacturers. Have you ever watched a small child open a candy bar, sadly discovering that it was mostly wrapper? Homemakers have been tricked into buying a large box—just because it was a large box—and arriving at home find that the box is only half full.

Manufacturers Defend Themselves

Manufacturers defend the oversized containers in which they package many of their products on several grounds. Some point out that settling does occur. Some say they use double cardboard boxes for protection of their product. Others admit that they are trying to get "billboard" space on store shelves by making the box big enough to be seen easily. Packages like these are sure to make the product cost more; it costs more money to make a box with a false lining. Grocery shelves must be large to accommodate these bigger products, or fewer products can be placed on the shelves. Therefore, the expense of running the store is higher and this expense is passed on to you, the consumer.

Most of us shoppers are not efficient enough in mental arithmetic, especially in fractions, to figure out—while standing in an aisle of a busy food store—which is the best buy. Here is a problem which will illustrate this, and point out a deceptive packaging device.

Which would be the better buy in detergents—a "large size" in a rather small-appearing package, or the "economy size" in a large package of

Proposed bill would stop cents-off deals.

Candy wrappers often fool children.

Shoppers

Sneak Coffee Prices Up

Makers of a certain brand of instant coffee have enraged an Atlanta, Ga., man.

With just a smidgen of coffee left, he bought a new jar. He noticed that the price on the old jar was 99 cents, and the new one cost 91 cents.

Fine, so the price of coffee had dropped eight cents, he thought.

But, then he noticed that the 91 cent jar was smaller than the 99 cent one. Reading the label of his new jar, he noticed that it was the NEW five-ounce size. An ounce less coffee, eight cents less—guess it all evens up, he presumed.

Then he put his mathematical mind to work. Six ounces at 99 cents is 16½ cents an ounce. And five ounces at 91 cents is 18 and one-fifth cents—1.7 cents more per ounce.

"I get in a great rage at this," he said. "If people are going to sneak their prices up on me, I want them to be honest about it and not try to hornswoggle me into thinking they are doing me a favor!"

the same brand? The net weight of the "large size" is listed as 20 ounces and priced at 30 cents. The net weight of the "economy size" is listed as three pounds one and three-fourths ounces and priced at 79 cents. Confusing, isn't it? After figuring this out, you will find that the small-appearing "large size" is actually more economical than the so-called "economy size."

Bills Are Being Presented

Bills to promote truth in packaging are being presented in the legislature, designed to protect consumers from misleading marketing practices. Here are a few examples of the protection U.S. Senator Philip Hart's bill (S-387) would offer:

1) Packages should contain no illustrations that might deceive the consumer as to content. A can of succotash, for example, shouldn't carry a picture of savory beef stew, even if that stew would be a logical end product of the can's contents.

2) No more "cents-off" deals or "economy-sized" designations would be allowed. These "come-ons" imply a control over retail price that the manufacturer doesn't have. And, too often, the consumer realizes absolutely no saving.

3) The Federal Trade Commission would be authorized to set up weights and measures in which a certain product line may be sold. Instead of having competing brands of potato chips, for example, selling in thirteen and one half, fifteen and one fourth and seventeen and one half ounce packages, wouldn't it be easier for the homemaker to figure her best buy if they all came in one-pound packages, or even breakdowns of one-pound quantities such as half-pound packages? And in all cases, net weight should be prominently displayed.

4) Packages that might deceive a consumer as to content should be eliminated. This, for instance, would bar the six-inch cardboard tray holding the four-inch candy bar.

5) "Serving standards" should be established. How much filet of sole, for example, will "serve four"? One pound or four forkfuls?

Content weights differ—jars same size.

Is this box padded to PROTECT product?

In 10 Years—20,000 Salesmen

Senator Hart (D-Mich.) pointed out that there are about 7,500 items in the average supermarket today. Ten years from now there will probably be 20,000. That means 20,000 "salesmen" for you to cope with!

There are three ways to fight against deceptive packaging, Dr. Morse points out: 1) through cooperation of manufacturers, 2) by government legislation, and 3) by educating the consumer. "The first two solutions are in the hands of congressmen and manufacturers," said Morse, "and it's too bad we have to legislate something that should be common sense and decency."

"The third is up to you," he concluded. "Watch for these deceptive packaging devices the next time you go to the store, and help eliminate these products from the market."

Research on Swine Reveals

Healthy-Looking Pigs May Be Ulcer Victims

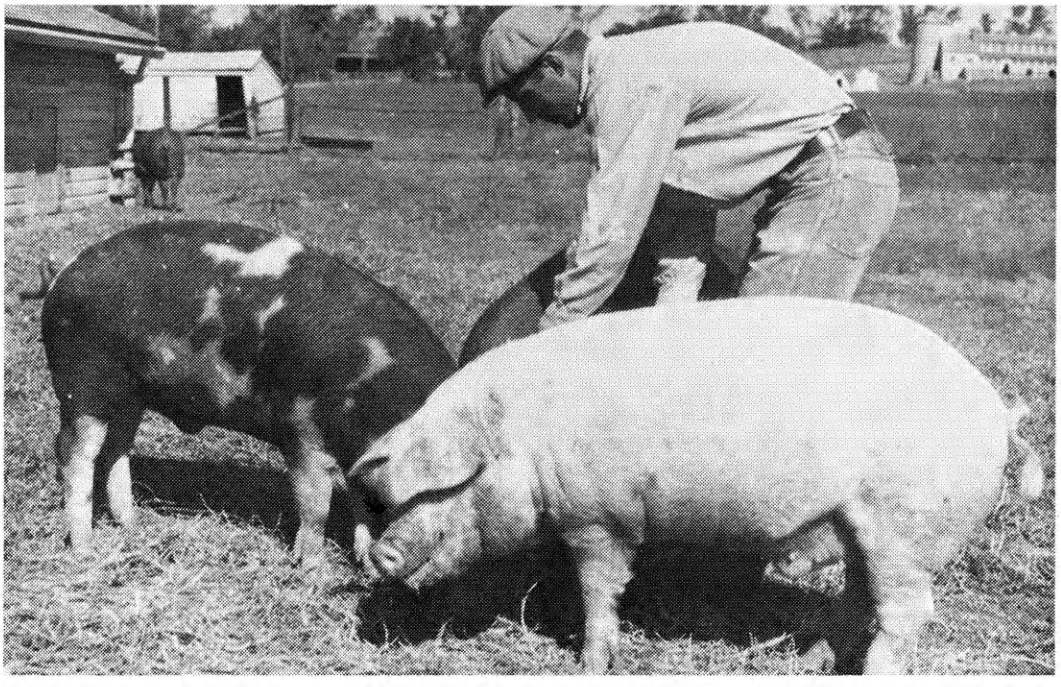
Above is a ruptured ulcer which penetrated the stomach lining.

by Cindy Winter

YOUR swine may be suffering from stomach ulcers, even though you are unaware of it. These open sores in the stomachs can be fatal to your animals and already have claimed lives of many pigs in Kansas State University's testing stations and on several farms across the state and nation.

Because of these losses, researchers at Kansas State, Purdue, and Wisconsin Universities have begun studying this new enemy.

At Kansas State, W. J. Griffing, DVM, with the aid of an $8,650 one-year fellowship from National Institutes of Health (NIH) is working under Dr. Embert H. Coles, associate professor of pathology, who is directing the research at K-State. Other researchers, financed by a $17,250 three-year grant, also from NIH, are assisting in the study, which was begun in 1961.



Swine confined during winter months seem to have more ulcers than those in luxuriant pastures.

Findings at K-State thus far indicate that ulcers in swine are related to stress, environment and diet. Ulcers have been found in stomachs of both sexes of numerous ages and breeds of swine. Researchers are trying to determine specifically what bothers the pigs.

For instance, banging of self-feeders might be the cause of stress in some of the animals. Since ulcers may be caused by an improper diet, K-State scientists plan to introduce a new experimental feeding program, in which various antibiotic levels will be maintained for similar experimental groups of pigs.

Confinement May Cause Ulcers

In studying pigs' environments, scientists have found that animals kept in confined areas have had more ulcers than those kept in pastures. To date, studies haven't been able to determine whether ulcers can be inherited.

Work being done at K-State now deals mainly with how the ulcer develops. Dr. Coles remarked that "there seems to be a certain pattern." Tissue at the entrance of the stomach builds up, thickens, and at a certain point, breaks off, taking part of the stomach wall lining with it. With the lining gone, a raw, open sore or lesion is exposed to gastric juices working within the stomach. As the ulcer progresses, sharply defined edges, which are sometimes elevated above the level of the adjoining surface, appear around the floor or crater of the ulcer.

New Lining Sometimes Forms

Gastric juice eats its way into the stomach wall at the ulcer crater. When it eats into a blood vessel, it causes a hemorrhage. A large hemorrhage may be fatal. However, a new lining sometimes forms after the ulcer breaks off, but it obviously is not the same as the original stomach lining. If a new lining forms, the animal will recover.

Researchers think that an invasion of yeast into the stomach lining may cause the original tissue thickening, which later leads to development of the ulcer. To test this hypothesis, they plan to operate on swine stomachs and insert some yeast into normal tissues to observe the results.

Since so many swine fatalities have resulted from these ulcers and because ulcers are so common in man, scientists are trying to relate the pig stomach to the human stomach, so that data compiled for one also may be used in the study of the other. Researchers have already noticed that ulcers occur in the upper part of the pig's stomach, while they usually appear in the lower part of a human stomach. The place in the lining where ulcers form in pigs is different from where they form in man, but the rest of the stomach lining is similar.

"Within the next year, we hope to examine between 5,000 and 10,000 pigs' stomachs," Dr. Coles said. These stomachs will be obtained from several large packing houses. "We hope that this project can be continued another four years," Dr. Coles added.

No Exterior Evidence of Ulcers

"What can I do to determine if my pigs have ulcers?" may be the question in your mind at this point. Dr. Coles said that there is no visible exterior evidence that a pig has ulcers until hemorrhaging begins. Then the pig usually dies, and the carcass becomes a total loss. If the animal is slaughtered before hemorrhaging occurs, there is no financial loss to the farmer. Dr. Coles added that with only two years of research completed, little is known about a cure once the pig has acquired ulcers.

With the project still in its early stages, no results are yet complete. But before scientists finish their work, they hope to be able to tell you how to care for pigs that have ulcers and how to prevent your pigs from acquiring them.

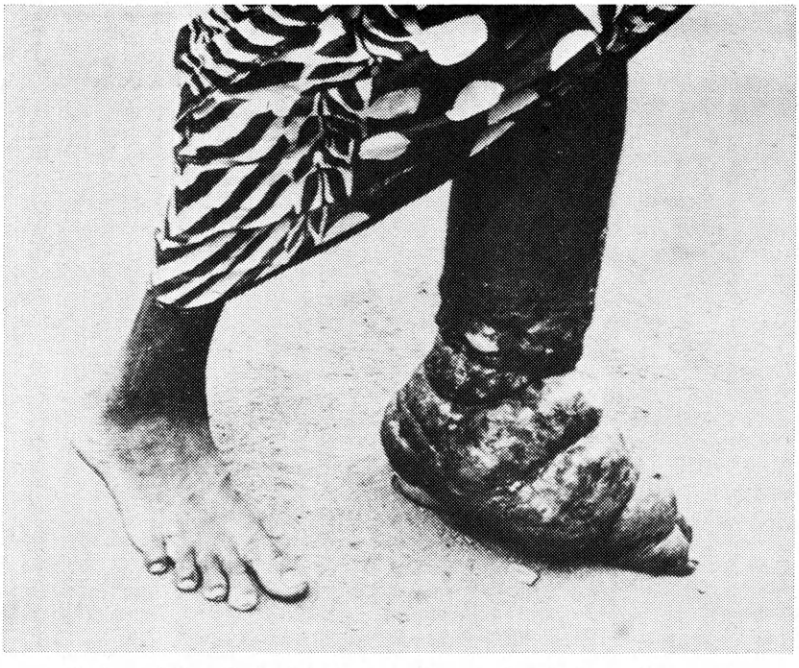
Biological vs. Chemical Control

Rachel, Rachel,
Quite contrary,
How does YOUR garden grow?

From certified seeds
To hybrid plants,
With fertilizer and hoe;

With insecticides
And herbicides,
From scientists that know!

by Paul Vincent



This is a victim of elephantiasis, a disease chemicals could control.

SILENT SPRING by Rachel Carson, a non-fiction best seller for the past several months, resulted from four years of research on misuses of pesticides. Miss Carson presents a dramatic account of the use of modern pesticide chemicals in which the author vigorously campaigns for an evaluation of the destruction and deaths caused by their use.

She upholds her view with many isolated tragedies which oppose a few benefits that she manages to discount or not even mention.

Kansas and United States agriculturists realize the benefits and necessity of modern pesticides.

Government entomologists say that 62 of 88 (70 percent) of the important crops produced in the United States could not be commercially grown with success, without pest control.

Efficiency, effectiveness must be balanced with safety when using pesticides.

Another cause for concern is insect-borne diseases. For centuries, Black Plague, typhus, yellow fever, malaria, sleeping sickness and many other diseases have left their mark on people throughout the world.

Pesticides Control Diseases

Modern pesticides have eliminated or retarded the spread of many of these diseases. Although we seldom hear of such diseases plaguing the United States today, they sometimes do occur. For instance, in the encephalitis (sleeping sickness) outbreak in Florida last summer, disease-carrying insects—mosquitoes, in this case—went unchecked and caused widespread suffering. Cases of encephalitis even have been reported in Kansas.

"How can pests be controlled?" Miss Carson campaigns for a program of biological control as opposed to chemical control. The biological control system relies on opposing forces of nature to balance each other. For instance, if there are weeds in a crop, introduce an insect that will feed on the weeds and not the crop, or introduce a disease that will attack the weeds only.

Successful in Some Areas

This type of control has been successful in some areas. The milky-disease control of Japanese beetle larvae and whiteflies; the irradiation sterilization of male screw-worm flies; the use of lady beetles to control alfalfa aphids in valley pockets of the western mountains and the Australian lady beetle to control cottony-cushion scale in California orange groves are all good examples of effective biological controls. However, you can easily see the tremendous difficulties involved in finding insects or diseases that will attack only one specific pest and not destroy crops or beneficial insects.

If growers today had to rely on biological controls, perishable crops such as tomatoes, lettuce, and strawberries, for example, would become restricted and expensive; then, instead of paying 20 percent of your total income for food, you would pay more than 40 percent.

Silent Spring suggests that such a situation would only reduce this country's tremendous surpluses, and that in turn would be beneficial to the nation's economy. According to United States Department of Agriculture figures, if all supplies of food were discontinued completely, the nation's population could live about 90 days on food stored in warehouses and government surplus storage.

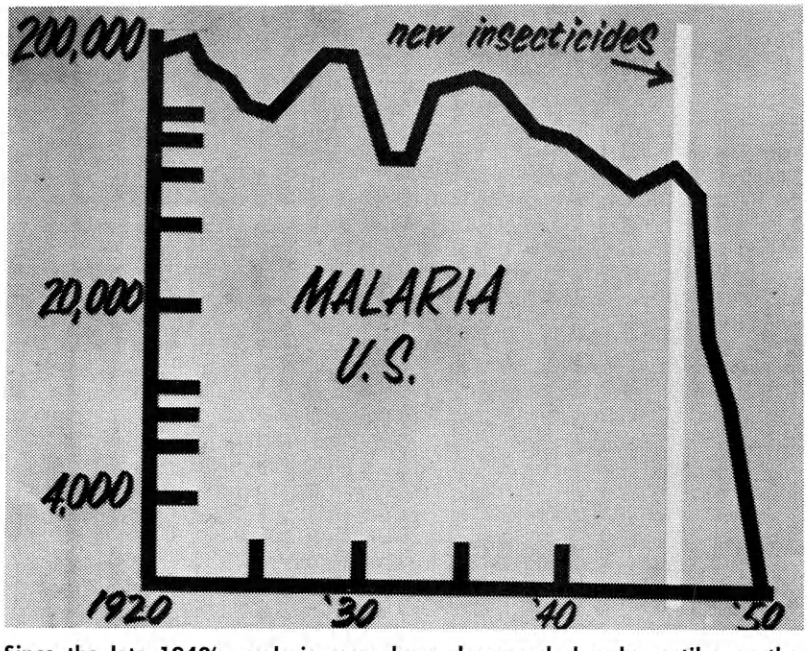
While this situation seems absurd, a similar incident did happen in Ireland. The great potato famine caused millions to die or flee the country—a national tragedy which present-day chemicals could have prevented.

Halting use of agricultural chemicals would tie a farmer's hands when an outbreak of field or forage-crop pests occurred. Ranchers would be forced to market cattle at unfavorable times if there were no way to keep grasshoppers from invading the range and feed crops.

Not Against All Pesticides

Miss Carson claims, however, that she is not against every use of pesticides.

(Continued on page 18)



Since the late 1940's, malaria cases have decreased sharply, until now the disease is virtually non-existent in the U.S. Insecticides account for decrease.

Combine Instant Foods For Variety in Menu

by Sharon Stauffer

AS YOU push a grocery cart down the supermarket aisle, you notice display after display of food packages marked "instant," "ready-mixed," "condensed," "heat-and-serve," "thaw-and-bake" or "cook three minutes." Chances are you make selections including these quick-and-easy-to-prepare foods.

But the novelty of such a preparation can diminish; such foods may no longer appeal to you for their taste, but merely for their convenience.

How can you still use these products, prepare tasty food, and add variety to your meals? Perhaps the following suggestions will help you.

If you always serve wieners as hot dogs, try this to give the meat new taste: Cut the wiener lengthwise, almost through to the other side. In the slit, place a wedge of cheese. Wrap the wiener, spiral fashion, with a strip of bacon and fasten with a toothpick. Broil until the bacon is crisp.

Top Biscuits Many Ways

Ready-to-bake biscuits which come in a can save minutes in the morning. But if you're tired of them plain, try these toppings:

Spread the top of each biscuit with soft butter. Sprinkle each with a mixture of sugar and cinnamon. One-fourth cup sugar and one teaspoon of cinnamon will make enough for one container of biscuits. Bake according to directions on the package.

Mix one-third cup melted butter and one-third cup brown sugar. Place the mixture on biscuits which have been placed in muffin cups. Add two or three pecan halves to each biscuit. Bake according to directions.

Canned Soups Add Zest

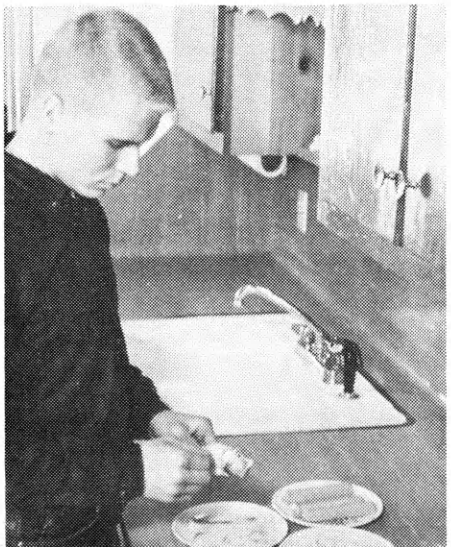
Canned soups, when added to other dishes, can add flavor and zest to a regular dish.

Use condensed cream of tomato soup as a base for vegetable soup. Use the juice from the vegetables to dilute the soup base and add leftover peas, potatoes, carrots, green beans, or other vegetables.

Add cream of tomato soup or cream of mushroom soup to casseroles, or pour part of a can of soup over a cut of meat, such as beef, and let the meat cook in the liquid. Do not dilute the condensed soup.

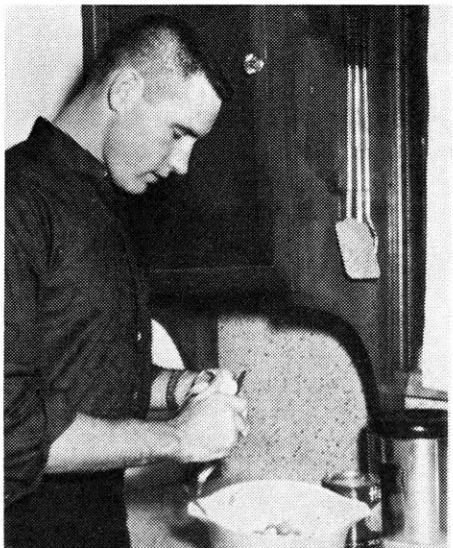
Use cream of mushroom soup as a white sauce for dried beef on toast. Thin a ten and a half ounce can with one-half can milk. Cut up four ounces of drief beef and add to the soup. Pour over toast. (This serves four.)

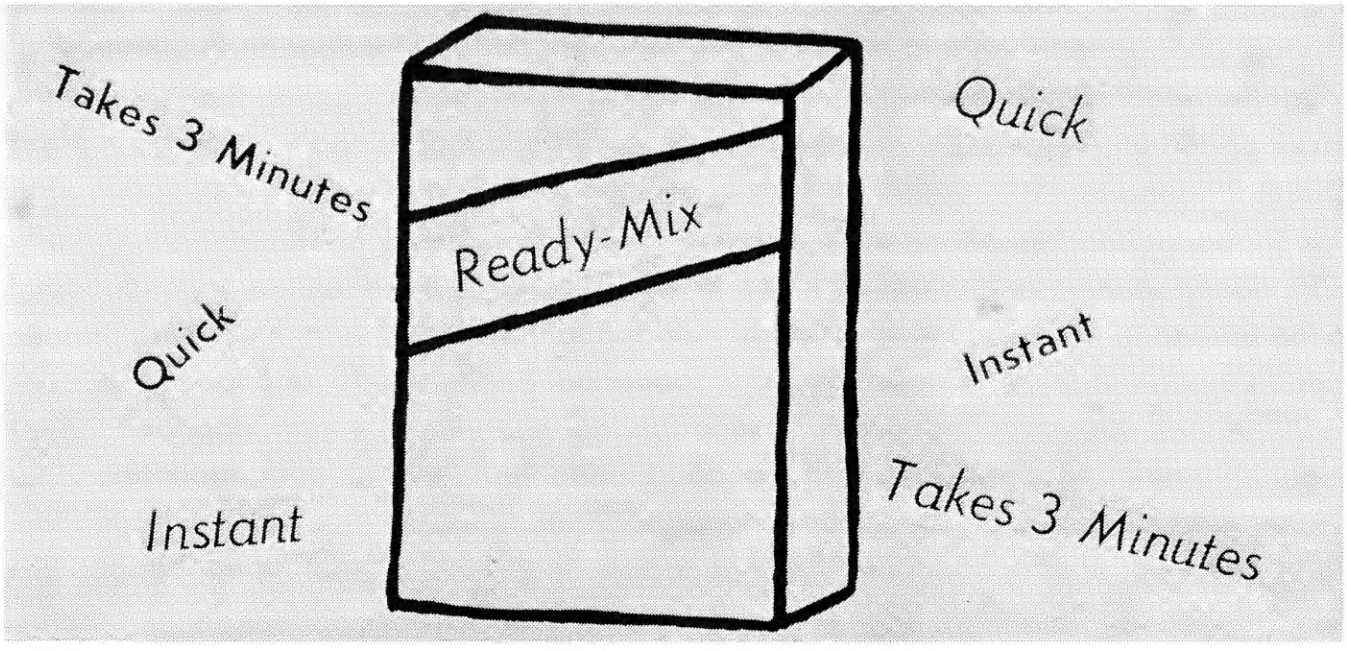
To give canned or fresh fruit some new life, combine several fruits.



Use your imagination in combining several fresh or canned fruits.

Tired of hot dogs? Stuff wieners with cheese, wrap them with bacon and broil 'til the bacon is crisp.





You can use your imagination when it comes to combinations of apples, bananas, peaches, oranges, pears, grapes, and cherries. A small amount of sugar is usually needed if the fruit has not been in a syrup. Coconut and nutmeats can also be added. This is a good way to use small amounts of fruit left over from other meals. Serve as a salad, or as dessert.

Vary Cake Mixes for Desserts

Even cake mixes can lead to tastier desserts.

Frost a cake with coconut or chocolate chips added to the icing. Or, add two-thirds to one cup finely chopped nuts to the cake batter just before baking.

If you're making a white cake, mix in half-cup chopped nuts and half-cup maraschino cherries with the first egg white. Or make cupcakes to use as a base for fruit—strawberries may be used and topped with whipped cream. Or, pour pudding (made from a mix) over individual cakes.

Add mint flavoring to a chocolate cake batter.

May Be Used As Cookie Dough

Cake mixes can also be used as cookie dough. To one package of cake mix (white, yellow, spice, or chocolate) mix in one-fourth cup soft shortening, one egg, and two tablespoons water. Mix very thoroughly, then chill dough. To bake, heat oven to 375 degrees Fahrenheit. Roll the dough into walnut-size balls and place them two inches apart on an ungreased baking sheet, or drop by spoonfuls on the baking sheet. Bake cookies for about 10 minutes. Do not overbake. Cookies will be soft when removed from the oven, but will cool to crispness. This recipe makes about three and a half dozen cookies.

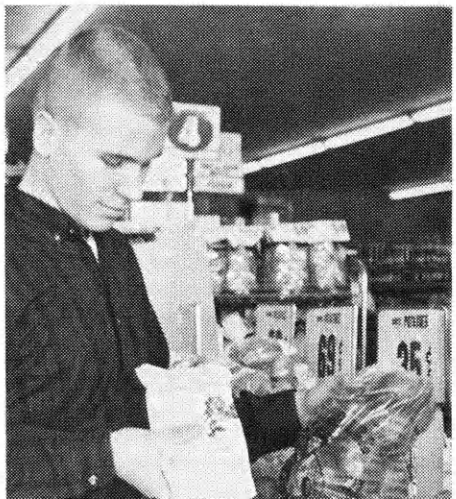
For variety from the plain cookies you have just made, add: A small package chocolate bits; three-fourths cup chopped nuts; a cup of shredded coconut; or a cup of chopped salted peanuts.

To cut down that too-sweet taste sometimes found in whipped cream or similar toppings, fold crushed berries or a crushed peppermint stick into stiffly beaten whipped cream that has been chilled.

Add Variety to Gelatin Dishes

Fruit is often added to gelatin, but these combinations may be new to you. After the gelatin has started to thicken, add: one cup of applesauce; one-half cup of chopped English walnuts; one-half cup crushed pineapple and one-half cup chopped celery; bits of angel food cake (the cake may be slightly stale); or half of a small container of cream cheese.

Experiment with prepared foods in your kitchen. You may find food combinations that will become favorites with you and your family.



While shopping, you probably choose quick - and - easy - to - prepare foods.

For a change that's delicious, you may top ready-to-bake biscuits with sugar and cinnamon or nuts.

Pesticides

(Continued from page 15)

"My contention is not that moderate chemical controls should never be used under any circumstances, but rather that we must reduce their use to a minimum and must as rapidly as possible develop and strengthen biological controls.

"I contend that we have put poisonous and biologically potent chemicals indiscriminately into the hands of persons who are largely or wholly ignorant of the harm they can do," she says.

On this point authorities readily agree with Miss Carson. Too many people do not realize that chemicals which will kill insects will kill people, too—if misused.

Problem Is in Storing

Careless storing of pesticides seems to be the biggest problem. Data compiled by the United States Public Health Service reveal that in 1956, of the 152 accidental deaths attributed to pesticides, 94 (60 percent) involved children under 10 years old; 78 of these children were under four.

Most casualties involve individuals who carelessly ignore prescribed precautions and become overly exposed. Miss Carson suggests that the cure for this would be extensive state and national governmental restriction on sale and use of pesticides.

Prominent agricultural extension entomologists believe that educational programs for manufacturers and users would significantly reduce the careless use of the chemicals.

Be Cautious in Chemical Use

Certainly there is need for caution and knowledge of chemicals and their toxic potential when using agricultural pesticides. Too many people think "If one pound of this stuff is sufficient for an acre of crops, I'll use two pounds and do a real job of it!" Pesticides can be helpful to agricultural programs, but use them with discretion.

Although *Silent Spring* presents only one side of a very complex problem, perhaps it can stimulate those concerned with the production, use and control of pesticides to exercise greater care in protecting public welfare.

Visit Kansas State University's

Ag Science Day,

Home Economics Hospitality Day

and

Little American Royal

SATURDAY, MARCH 30

Departments in the Schools of Agriculture and Home Economics will have exhibits on display throughout the day.

The Little American Royal is a fitting and showing contest sponsored by the K-State Block and Bridle Club and the K-State Dairy Club.

Plan Now To Attend!