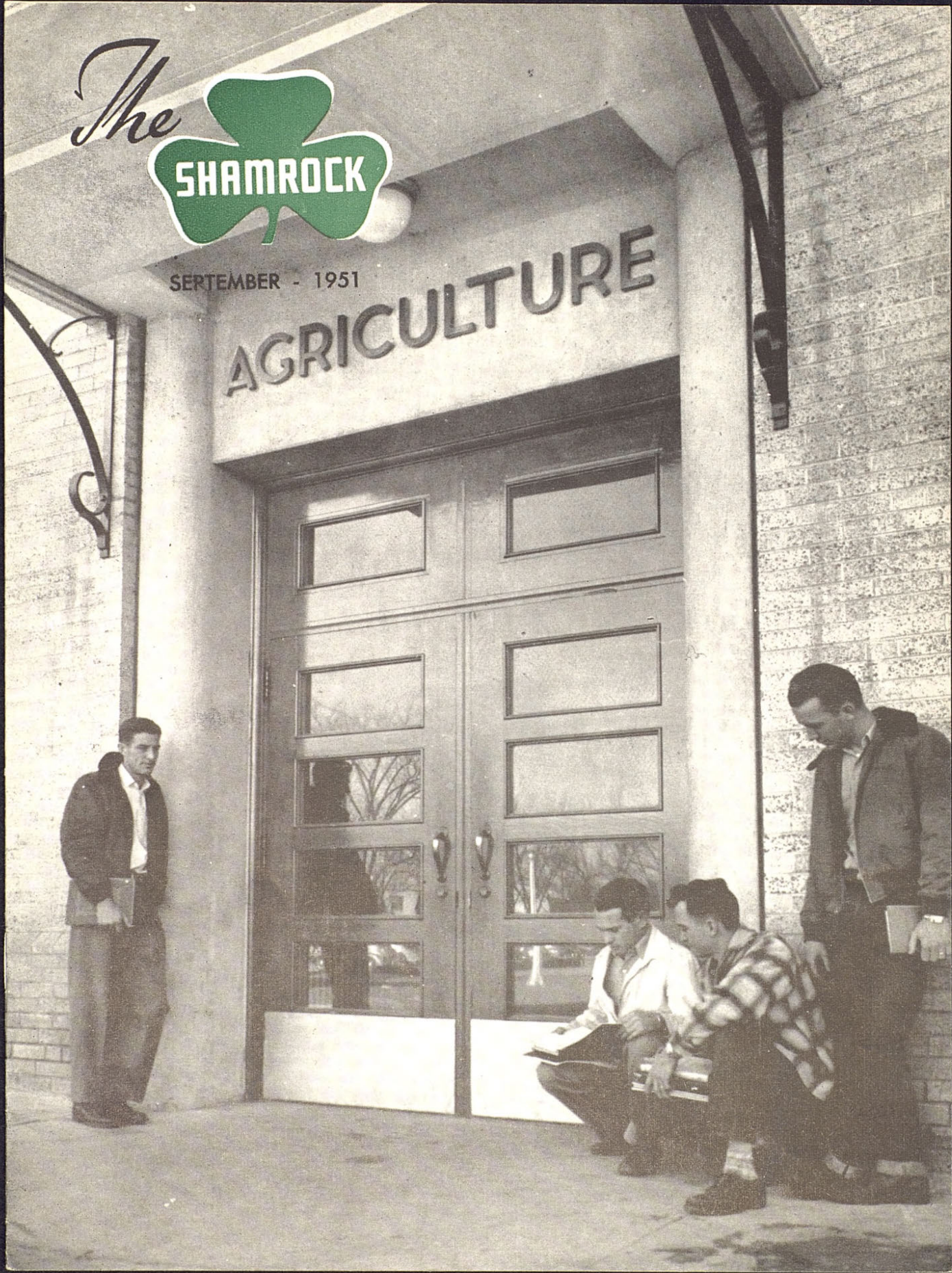




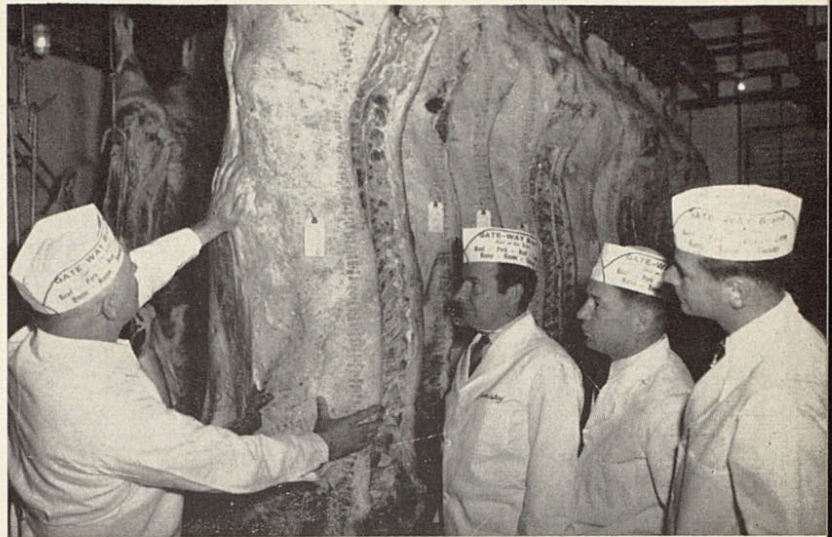
SERTEMBER - 1951

AGRICULTURE





Colorado A & M



Veterinary students and instructor at Colorado A & M visit a commercial packing company to study meat inspection methods.

Since its founding almost 82 years ago, the big agricultural and mechanical college at Fort Collins, Colorado, has exerted an important influence on farm, ranch and industrial life in Colorado.

This modern educational plant provides instruction in agriculture, engineering, home economics, forestry and range management, veterinary medicine, and other related arts and sciences, including languages, literature and biological, physical and social sciences. Drawing students from towns, cities and rural areas of Colorado, as well as from many other states, Colorado A & M is engaged primarily in the work of training young men and women to become more useful citizens. Since the end of World War II, enrollment at the college has increased each year with 3,786 students enrolled last year.

In addition to its educational services, Colorado A & M also performs for the people of Colorado extensive research on problems relating to agriculture, industry, home economics and

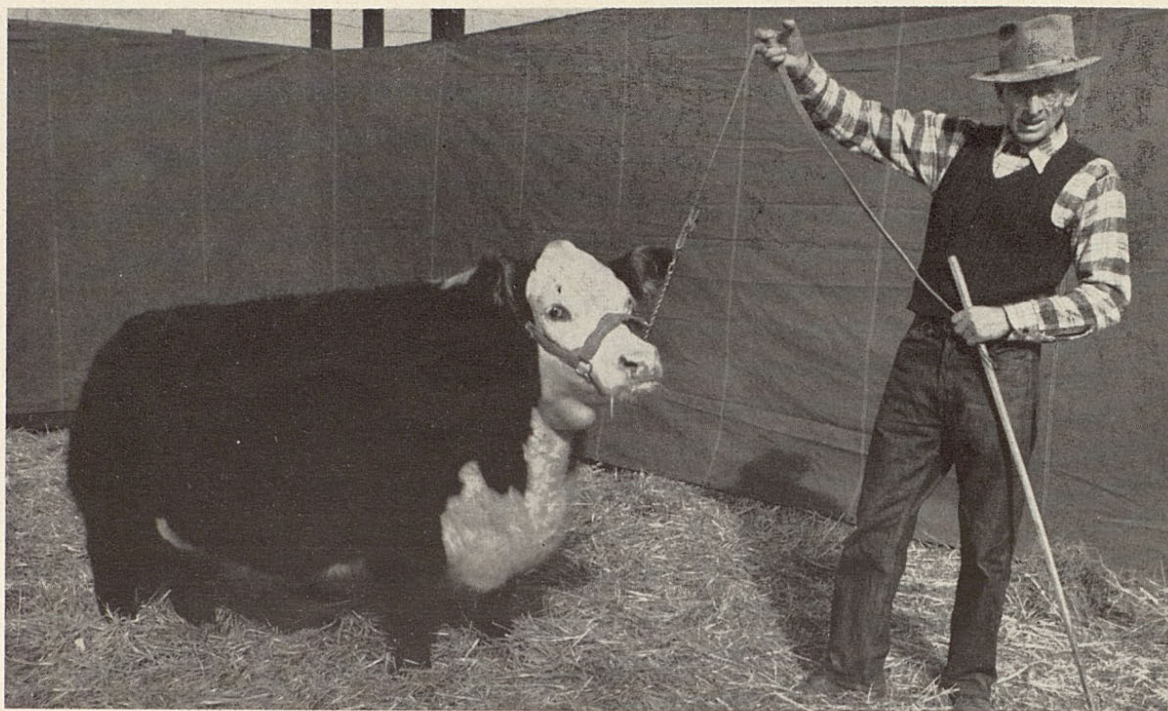
engineering. Equipment used in carrying out this research work includes 2,122 acres of college-owned farm and ranch land where many kinds of agricultural studies are carried out, both in the course of routine student instruction and as an aid to Colorado farmers and ranchers. Also on the campus are testing laboratories, used both for research and student instruction.

A third major responsibility of the college is that of making available to the people of the state the results of its research. Much of this job is accomplished through the Agricultural Extension Service.

The principal way in which Colorado A & M serves Colorado citizens is, of course, through the training of students. The vast majority of these students, upon completing their studies at the college, successfully fit themselves into the agricultural, commercial, or industrial life of Colorado. In helping these young men and women acquire knowledge that will aid them in becoming more useful citizens, Colorado A & M has a well-qualified administration, an excellent faculty, and laboratories and other physical facilities rated among the nation's best.

The college staff is headed by an outstanding young educator and administrator, W. E. Morgan, 40, who became the eighth president of Colorado A & M, October 1, 1949. When Morgan took over the administration of the college, he found it all but "bursting at the seams" be-

← Colorado A & M Administration Building, hub of all college activities, houses the college's administrative offices in all three branches of service—resident instruction, Experimental Station, and Extension Service.



ABOVE—Beef herdsman George Lawrence holds College Prince III, first place heavyweight steer at a recent National Western and part of college herd.

BELOW—This team from Colorado A & M placed second in the annual college wool judging contest at the 1951 National Western Stock Show held in Denver.



cause of big high school graduating classes throughout the state combined with a booming veteran enrollment. By the beginning of 1951, this phenomenal growth had shown little indication of ending.

To meet the many problems brought about by the rapid increase in enrollments during the past five years, administration officials have been kept busy expanding and modernizing facilities and equipment. In 1950, a million and a half dollars worth of new construction was completed on the campus. These buildings included a new veterinary hospital, dedicated February 20, 1950; a well-equipped chemistry annex; a major addition to the student union building; a residence hall for women students; and a number of faculty apartment units.

The lecture halls and student laboratories are only a part of the modern facilities available to Colorado A & M students. The Student Union Building, considered one of the best student centers in the state, houses a large number of student activities. The building, incidentally, was built with money raised by the students themselves and not with tax funds. A book store was added to the Student Union last year and another addition is now under construction. East of the Student Union, the men's gymnasium houses a large indoor swimming pool and field house for indoor physical education and athletics.

The college library occupies a modern building with excellent reading rooms. The stock of five levels contains more than 140,000 volumes. With its books, bound files, and many periodicals, the library serves students, instructors and research workers.

Still other facilities of the college provide

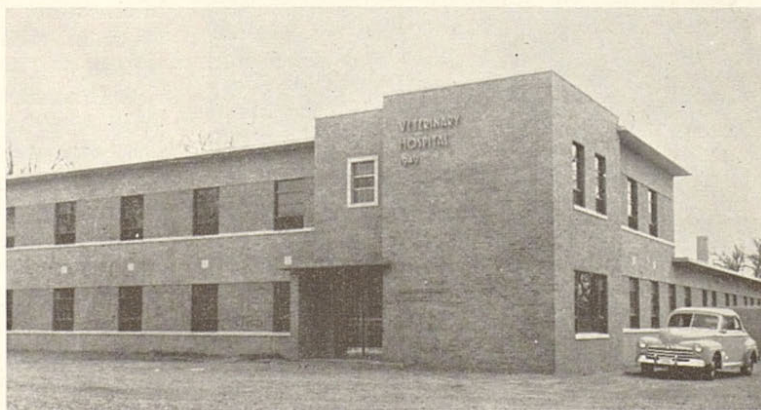


W. E. Morgan, Colorado A & M President

students with opportunities for practical field experience. A civil engineer's summer camp is located in the state forest, 95 miles west of Fort Collins. Geography of this area—including high mountain peaks, mountain meadows, streams and natural reservoir sites—makes possible student field problems in all phases of topographic and surveying work.

A summer camp is also available to forestry students. This camp at Pingree Park is located

New half-million dollar veterinary hospital was dedicated to the memory of the founder of the Veterinary Division, the late Dr. George H. Glover, who was associated with Colorado A & M most of his life.





These two A & M students relax in their apartment style quarters. The living room scene above was photographed in Lory Hall, new women's residence on the campus.

in the high mountainous country on the Cache la Poudre River, about 55 miles from Fort Collins. It includes approximately 1,600 acres and gives students an opportunity to receive practical experience in forestry work.

On the Cover

This month's cover picture shows a group of Colorado A & M students in front of the entrance to the Agriculture Building on the campus at Fort Collins.



Established in 1888, the Colorado Agricultural and Mechanical College has been serving farmers, ranchers, and other Colorado citizens for almost 32 years. Present responsibilities of the college include resident instruction, the Agricultural Experiment Station, and the Agricultural Extension Service.

In connection with class rooms and laboratories of the school of veterinary medicine, a modern clinic and adequate pasture facilities are maintained to give students practical experience with a variety of diseases of both large and small animals.

In this work of vocational education, the graduate school at Colorado A & M has attracted national recognition. The college at Fort Collins is looked upon as a leader in this specialized field of education and has awarded more advanced degrees in vocational education than any other school.

Present day visitors and students at Colorado A & M find few reminders of the early struggles to establish the College at Fort Collins. Founded even before Colorado became a state, the college was established on paper during a legislative session of Colorado Territory which opened in Denver, January 3, 1870. Mathew L. Taylor and Judge Jesse M. Sherwood, Representative and Councilman respectively from the First District, including Larimer County, rushed a Bill to establish an agricultural college in

Fort Collins through the House of Representatives and the Council. On the evening of February 11, 1870, they slipped it under the adjournment deadline and saw it on its way to Governor McCook.

The achievement of the early promoters of Colorado's agricultural and mechanical college can best be appreciated when considered in the light of Colorado's principal economic activities in 1870. At that time, the mountains of the territory were known as mining country. The economic potential of the rest of the territory had hardly been scratched. There was practically no farming in the territory at that time and industrial activity was confined almost entirely to mining. Denver, the largest city, was not an industrial center. Manufacturing industries consisted of one or two companies making some part of mining machinery. Foundries, power plants, smelters, and similar manufacturing enterprises had not yet been established.

With agriculture and industry so poorly represented in Colorado Territory at the time the college came into being, it is no wonder that many civic leaders were somewhat apathetic toward the new educational venture.

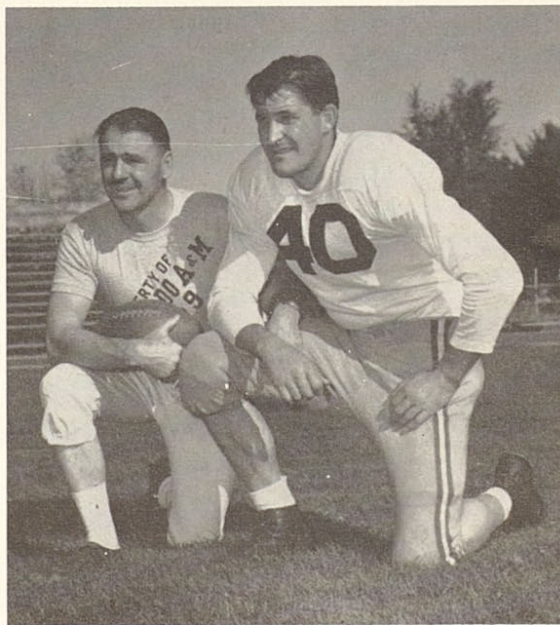
The location of Colorado A & M at Fort Collins is both pleasant and practical. The town itself is a progressive community with a population of approximately 18,000, whose residents cooperate whole-heartedly in college interests and activities. Some of Colorado's most scenic mountain country is located within a few miles of the campus, while much of Colorado's best irrigated farm land sprawls out to the east of Fort Collins. The high mountains not only provide students and faculty members with abundant opportunities for recreation, but they also serve as great outdoor laboratories for forestry and civil engineering students.

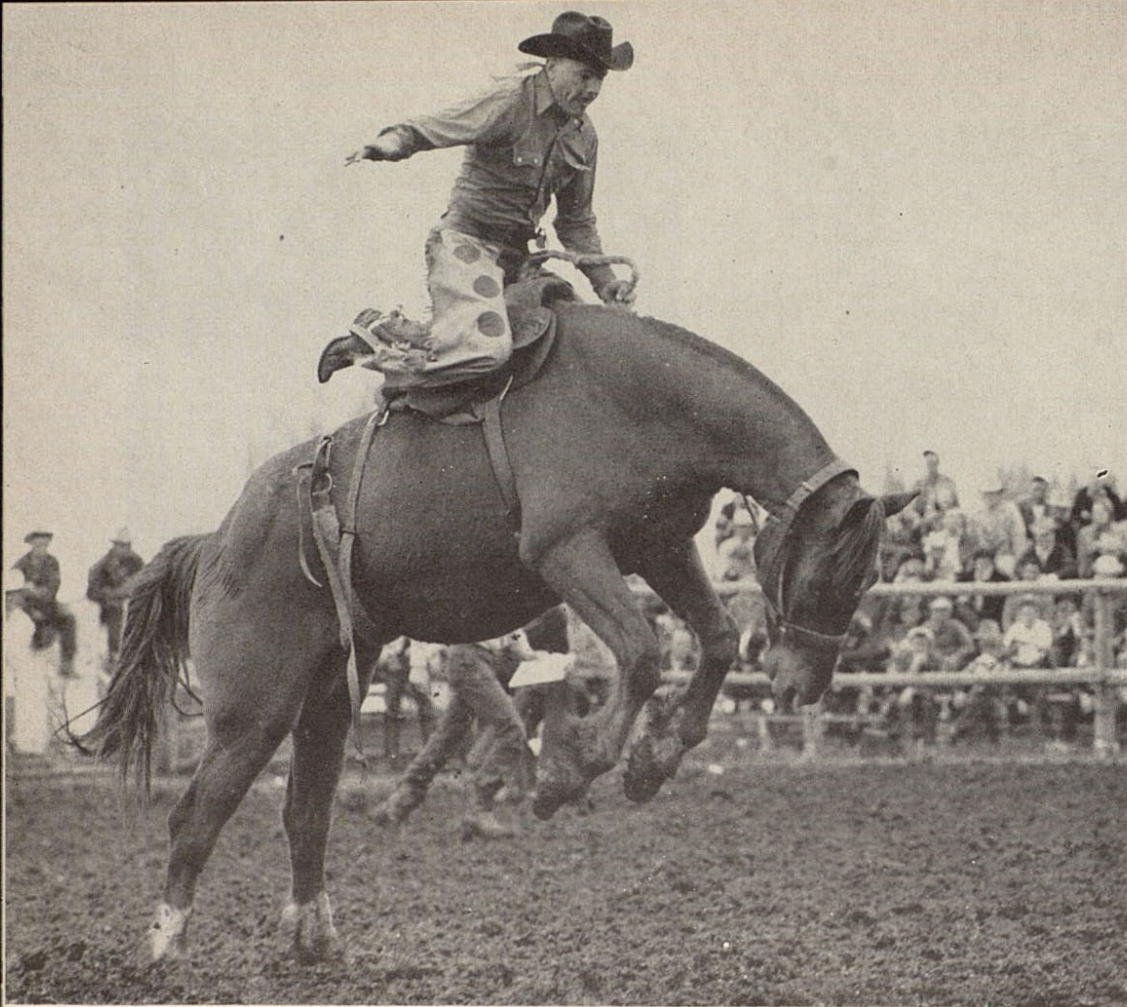
The responsibilities of Colorado A & M today are a far cry from anything the founding fathers of the institution might have visualized back in 1870. In the almost 82 years since the college was established, Colorado has progressed from an undeveloped territory to a thriving state with many industrial, commercial and agricultural activities contributing to its economy. During this period, the agricultural and mechanical college at Fort Collins has more than kept pace with the general growth of the state and has steadily increased its service to the people of Colorado.



ABOVE—Modern unit kitchens are part of Home Economics Department facilities at Colorado A & M.

BELOW—Coach Bob Davis discusses football strategy with Dale Dodrell, former Aggie gridiron star.



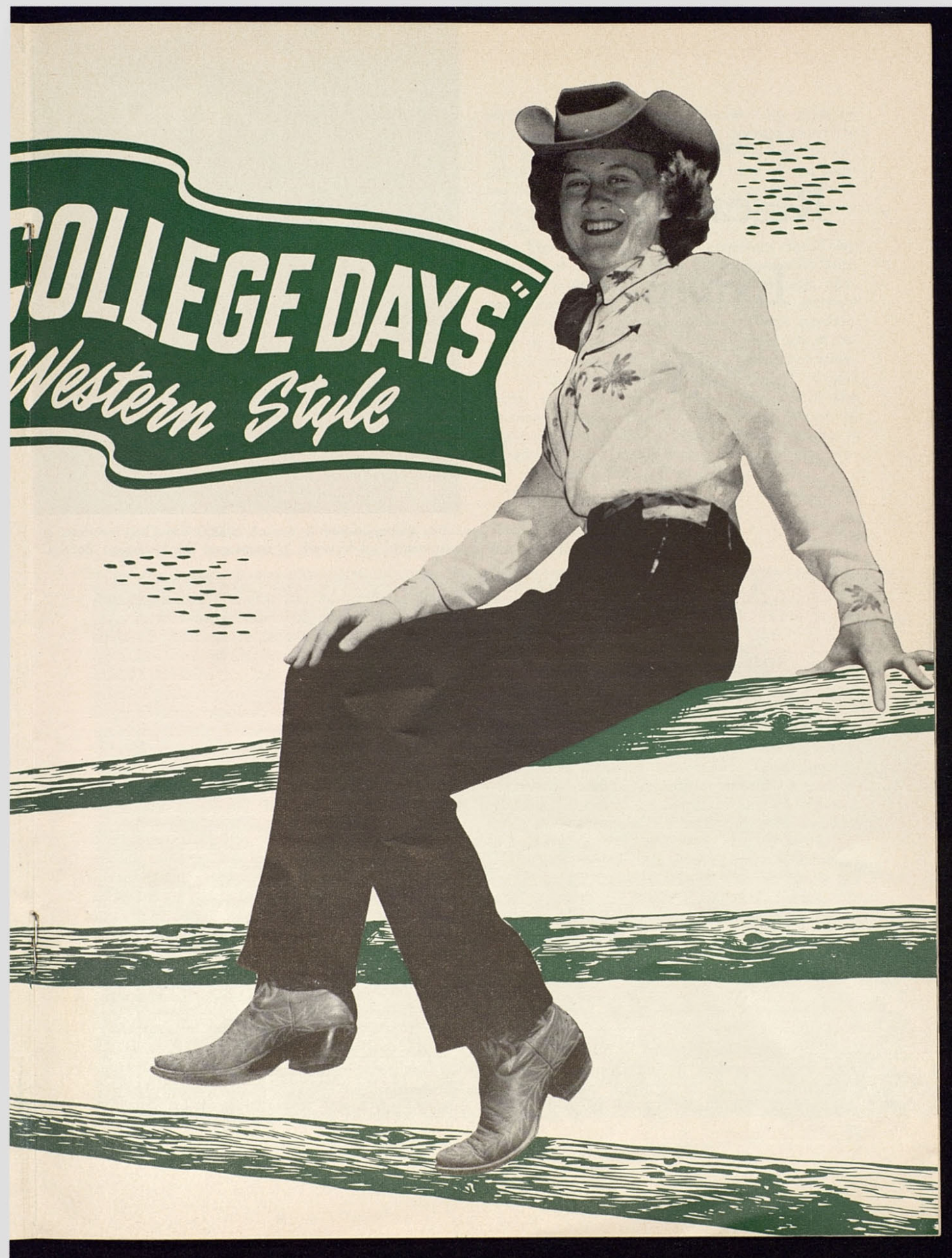


Included in annual festivities of traditional "College Days" celebration, sponsored by Colorado A & M Livestock Club, are two big rodeos, an open house, western-style barbeque, and parade. Queen of last "College Days" celebration was Miss Joyce Zeeck, right, of Lamesa, Texas.



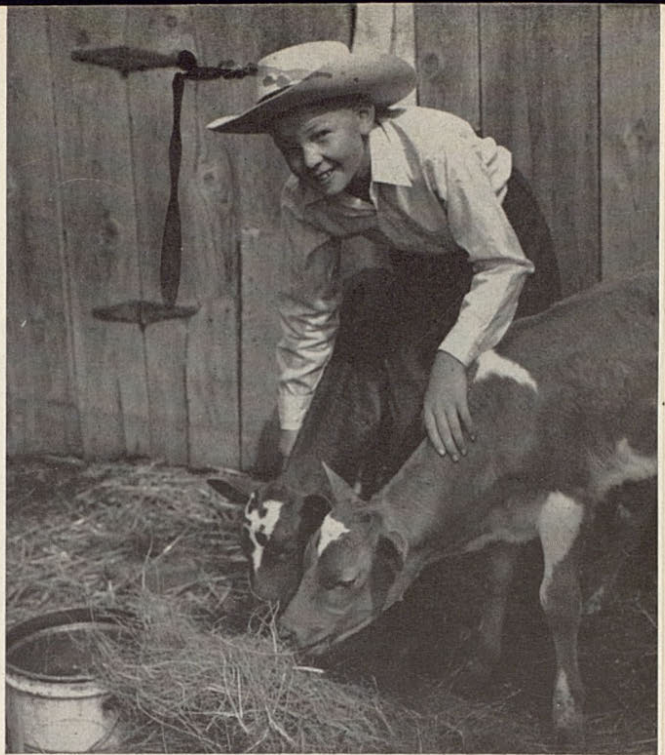
Gamma Phi Beta sorority won grand prize in last "College Days" parade with this colorful float.





Colorado A & M

Research and Extension Service



This young farmer is one of 20,000 4-H Club members in Colorado. 4-H work is sponsored by Extension Service.

Agricultural research is a major responsibility of Colorado A & M College at Fort Collins. And agricultural research logically leads to still another of the college's main jobs, that of extending results of this research to farmers, ranchers and related groups.

To carry out the first of these important responsibilities, an Agricultural Experiment Station, established in 1888, is operated by the college. Experiments and research performed by the experiment station have contributed consistently to the development of better farming and ranching practices in Colorado.

Farmers and ranchers have learned the value of looking to agricultural research to assist them in their operations. In the facilities of Colorado A & M College, they have a source of scientific information as well as a proving ground for original ideas which they themselves may have.

In addition to its value to agriculture, research carried on by the college at Fort Collins benefits other elements of Colorado's economy. Because the prosperity of manufacturing, mining, commerce, industry and other activities in Colorado is closely tied into agricultural prosperity, research that promotes better agriculture is of value to the state as a whole. One

important phase of research at the college, having to do with the development of more industrial uses for farm crops, exemplifies the close relationship between agriculture and industry.

At the time the first experiment station was set up in 1888, it was recognized, both by the people to be served and by those charged with doing experimental work, that a problem arising under certain conditions can be answered best by studying the problems under those conditions. For this reason, soon after the main station was founded, the Arkansas Valley Branch Station was established near Rocky Ford. This branch station, still in existence, has served farmers of the Arkansas Valley for 62 years and has contributed much to the development of that agricultural empire. Early basic experimental work at this station laid the groundwork for the establishment of the sugar beet industry in the Arkansas Valley.

Other branch stations which were established early were the Divide Branch Station at Table Rock and the Rain Belt Station at Cheyenne Wells. Both have since been discontinued.

Recognition of the need for experimental work where the problems are led to the establishment in 1907 of the Akron Field Station, near Akron, by the United States Department of

Agriculture. During the 44 years of its existence this station has solved many of the problems of the plains farmer, including the development of better adapted varieties of grains. This station now functions as one of the branch stations.

At present there are eight branch stations of the Colorado Agriculture Experiment Station. They are: Arkansas Valley Branch Station, Otero County; Dry Land Branch Station, Washington County; San Luis Valley Branch, Rio Grande County; San Juan Basin Branch at the Fort Lewis Branch of Colorado A & M College, La Plata County; Western Slope Branch, Delta County; Great Divide Branch, Moffat County; Flower and Ornamental Plant Branch, Denver County; and Potato Branch Station, Weld County.

The agricultural problems of Colorado are as diverse as its agriculture. Fruit growing on the Western Slope differs widely from such ag-

ricultural activity in the Canon City area or in northern Colorado. Range management on the plains is one thing, in the mountains another. Crops adapted to one section of the state are low producers in others. Livestock require different management practices in various parts of the state.

The great variety of problems faced by farmers and ranchmen in Colorado results from a wide divergence of soil types, climate, altitude, and water resources in various sections of the state. This divergence affects agriculture in so many ways that no single set of research findings is applicable to the entire state.

Under the direction of the staff of the main station at Fort Collins, projects of the branch stations greatly enlarge the scope of agricultural research in Colorado by making it possible to test research results under the va-

(Continued on Page 13)

Crop improvement is part of Colorado A & M research. Below, a group of college agronomists and visiting farmers examine experimental breeding plot of alfalfa.





ABOVE—Commercial feeders get a first hand view of cattle used in A & M experiments. Experimental herds are part of the college's research program.

BELOW—Farmers and grain industry men meet with A & M staff members at a wheat field day to compare new wheat varieties with standard varieties.



RESEARCH—Continued.

rious conditions existing in different regions.

Much new and useful information pertaining to farming and ranching in Colorado has resulted from the work of the Colorado Agricultural Experiment Station and the various branch stations. But to be of value to the economy of the state, this information must be made available to farmers, ranchers, educators and others in a position to put it into practice. The job of getting the results of agricultural research to these farmers and ranchers is the primary responsibility of the Agricultural Extension Service. Working with county officials and the United States Department of Agriculture, Colorado A & M plays an important part in the Agricultural Extension Service in Colorado.

About 40 years ago, when Colorado attained first rank among states in irrigated acreage, the State Board of Agriculture—the governing board of Colorado A & M—decided that an organization was needed to bring the scientific discoveries of the Experiment Station directly to the people. Accordingly, in 1912, county extension agents were employed in Logan and El Paso Counties and in the San Luis Valley. In each instance, as is still true, volunteer local leadership helped extend the program. These first extension agents in Colorado preceded by two years the Smith-Lever Act which authorized federal participation in an Extension Service program through land-grant colleges.

In actual practice, agricultural extension work is an out-of-school system of education in which adults and young people learn by doing. Such organizations and activities as 4-H clubs, home demonstration clubs, young farmer and homemaker groups, and county agricultural planning committees are examples of the work of Agricultural Extension Service in Colorado.

Besides its participation in regular extension work within the state, Colorado A & M is one of the four land-grant colleges and universities selected by state extension directors in their respective regions to provide in-service training for extension workers. In this capacity, the college at Fort Collins serves the western region, comprising the 11 western states and the territories of Hawaii and Alaska.

Other schools selected for this extension worker training are the University of Wisconsin, north-central region; Cornell University, northeastern region; and the University of Ar-

kansas for the southern region. These four regional schools have been established as a convenience and encouragement to extension workers to avail themselves of the opportunity for professional improvement.

With its facilities for higher education, its Agricultural Experiment Station, and its participation in the Agricultural Extension Service, Colorado A & M has a three-fold responsibility to the people of Colorado. In carrying out these responsibilities—teaching, research, and extension—the college has established a commendable record of service to the state.

CREDITS—All photographs used to illustrate articles about Colorado A & M College were made available through the courtesy of the News and Radio Service, Colorado A & M College, Fort Collins, Colorado. Descriptive information about the college used in preparation of the articles was also provided by the News and Radio Service.

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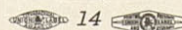
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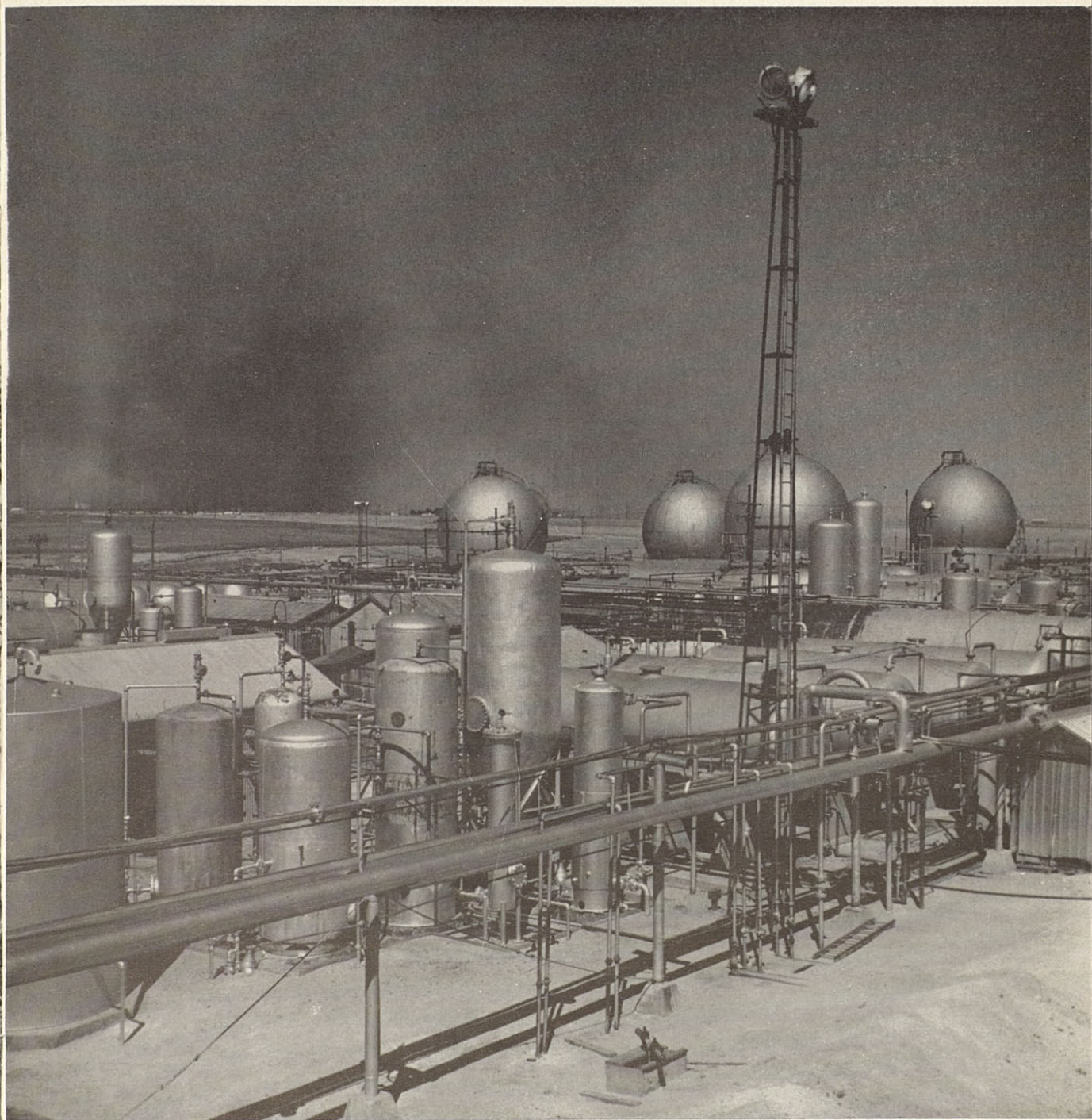
Shamrock's main processing units are the McKee Refinery and Natural Gasoline Plant, about 60 miles north of Amarillo near Dumas, Texas. These plants are equipped with the latest catalytic processing facilities. Largely as a result of petroleum research, they recover from a given amount of crude oil and natural gas more and better finished products than would have been thought possible a few years ago.

At one time, back before the day of automobiles, crude oil refining was simply an ordinary distillation process. Crude oil is a mixture of several different products — gasoline, kerosene, fuel oils and others. Old-fashioned refining methods separated these parts simply by boiling off first the gasoline, then the kerosene, then the fuel oils and heavier products. A large part of the crude oil was wasted by such inefficient methods or was discarded because of lack of markets.

In the past 20 years, the rapid development of internal combustion engines has brought about an ever-increasing need for more and better motor fuels. To meet this need, chemists,

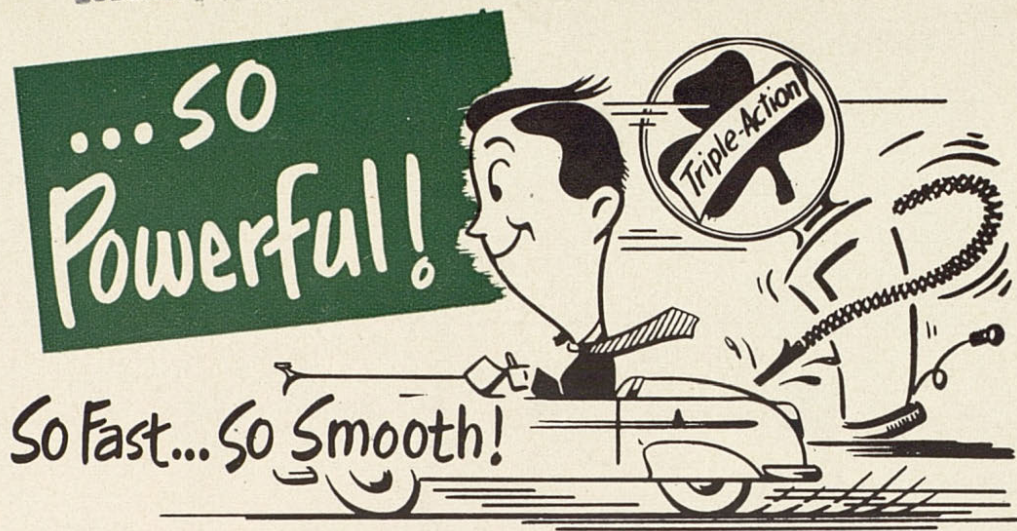
technicians, engineers, and other scientists in the petroleum industry have devised more efficient oil and gas processing methods. Most significant of these new methods are the "cracking" processes. Where old-fashioned refining merely separated the natural components of crude oil, modern "cracking" methods effect chemical changes, making possible the transformation of a heavy product such as gas oil into a product such as high-octane gasoline.

The use of chemistry in petroleum processing does not end with the manufacture of high-quality gasoline. Through the efforts of the thousands of chemists and other scientists at work in the petroleum industry, research to develop new products from oil and gas and to improve existing products is proceeding at an ever-increasing rate. The petroleum industry is now spending about \$100,000,000 a year on research. So far, the men and women who perform this research have given us more than 1,200 direct and synthetic products from petroleum and are hot on the trail for more. In addition to motor fuels and lubricants, petroleum now plays an important part in the manufacture of hundreds of everyday products ranging from rubber, plastics, and cosmetics to medicines and explosives.



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