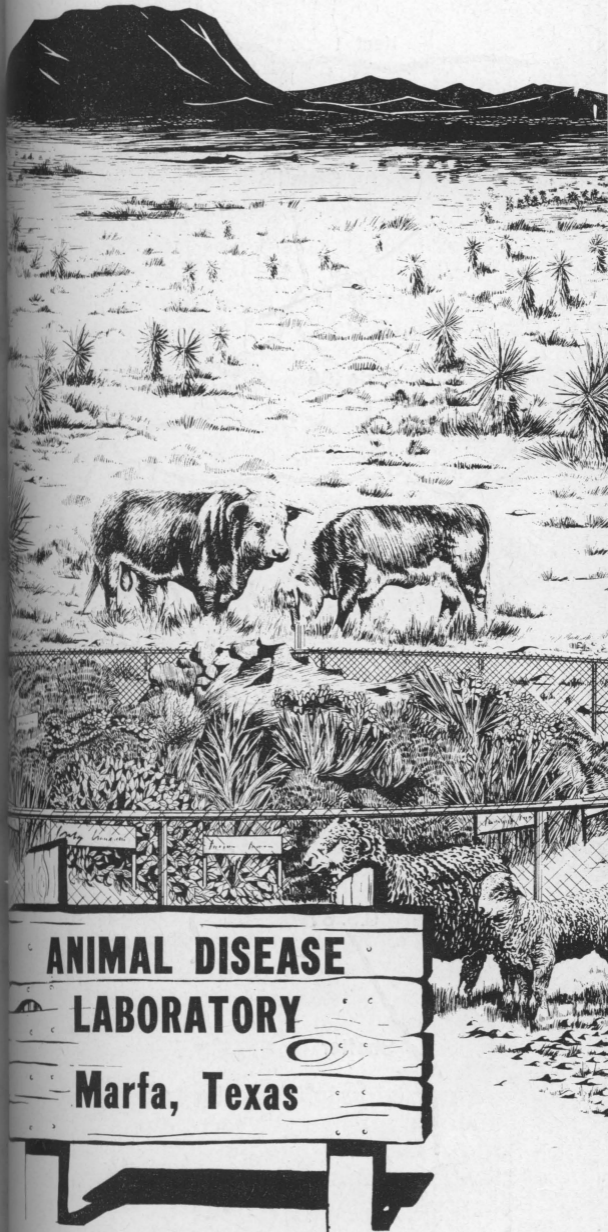


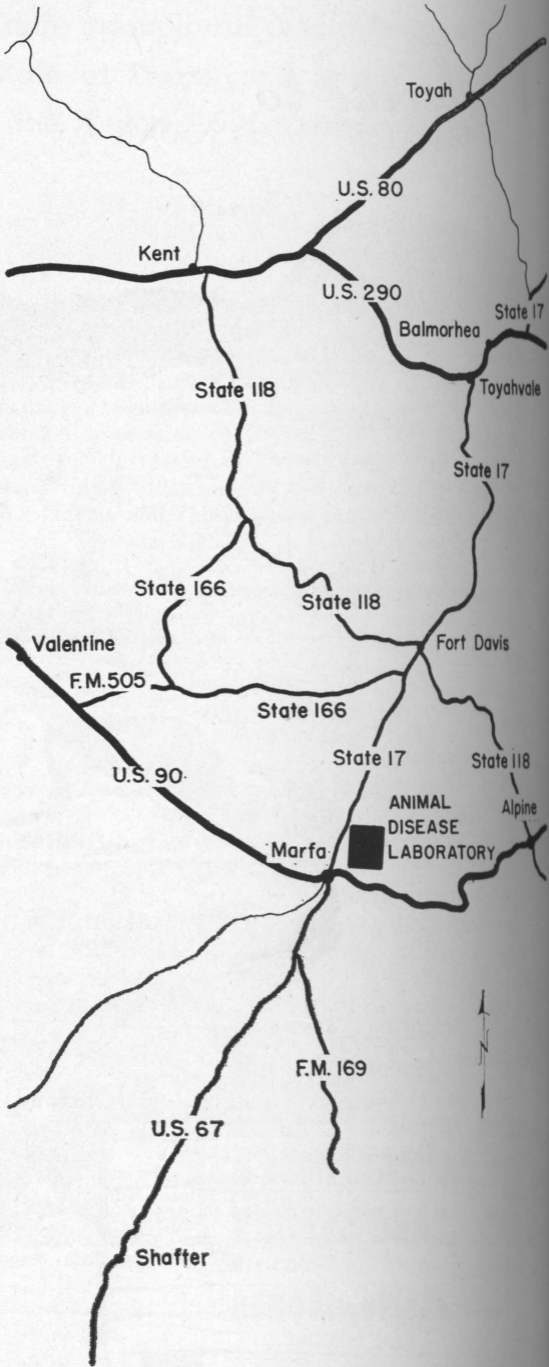
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JANUARY 1959

Welcome to



**ANIMAL DISEASE
LABORATORY**
Marfa, Texas

TEXAS AGRICULTURAL EXPERIMENT STATION



Welcome

to the

ANIMAL DISEASE LABORATORY

Marfa, Texas

The Animal Disease Laboratory was established in 1945 for the study of animal diseases which occur in the Trans-Pecos area of Texas to determine their prevention and control. It is located three miles northeast of Marfa on Ranch Road 1112.

Since there are at least 43 species of plants in the area known to be poisonous to livestock their study is of major importance here. A means of control for many of the poisonous plants has been developed, resulting in fewer losses of livestock.

Several plants thought to be poisonous have proved to be a valuable source of livestock feed when properly fed and supplemented.

This laboratory includes 400 acres of land, located on a plateau surrounded by the Davis Mountains, and is the outgrowth of the Loco Weed Laboratory established at Alpine in 1929. The land is owned by Presidio county and is under a 99-year lease to the Texas Agricultural Experiment Station. Elevation is 4,882 feet and the average rainfall is 12.81 inches. Buildings were furnished by the Highland Hereford Breeders Association, the Highland Sheep and Goat Breeders Association and other interested groups.

In recent years, work of this laboratory has been extended to the High Plains in cooperation with the Gaines County Commissioner's Court, and to many other sections. Much work is in cooperation with other substations and departments of the Texas Agricultural Experiment Station.

Results of research conducted by the personnel of this laboratory are made available through the press, radio and television, publications and personal appearances of staff members, and through the Texas Agricultural Extension Service.

Livestock owners are encouraged to present their problems to this laboratory, and visitors always are welcome. The address is Box 147, Marfa, Texas, and the telephone number is Parkview 9-4522.

J. W. DOLLAHITE

Superintendent and Veterinarian

T. J. ALLEN

Assistant Range Specialist



*Agricultural Research Projects
at the
Animal Disease Laboratory*

ABORTIONS IN CATTLE

Abortions have occurred regularly among cows grazing in the Trans-Pecos area and in many other areas of West Texas, resulting in losses to ranchmen of 10 to 60 percent of their calves. Average annual losses estimated as high as \$500,000 have occurred in Gaines county, and the average annual loss in Texas has been estimated at \$2 million to \$3 million.



Research conducted by personnel of this laboratory has proved that broomweed, seen in foreground, causes abortion in cows. This cow has aborted recently.

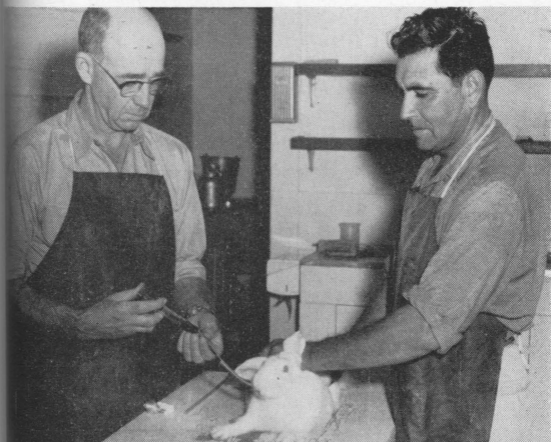
Research has proved the abortions are caused by cows eating perennial broomweed or turpentine weed. This weed also will kill cattle. Poison content of broomweed appears to be higher when temperature and moisture are favorable for it to grow rapidly, and abortions are more numerous when the weed is growing on sandy soil.

Tests also have shown it will cause abortion in Angora goats and domestic rabbits.

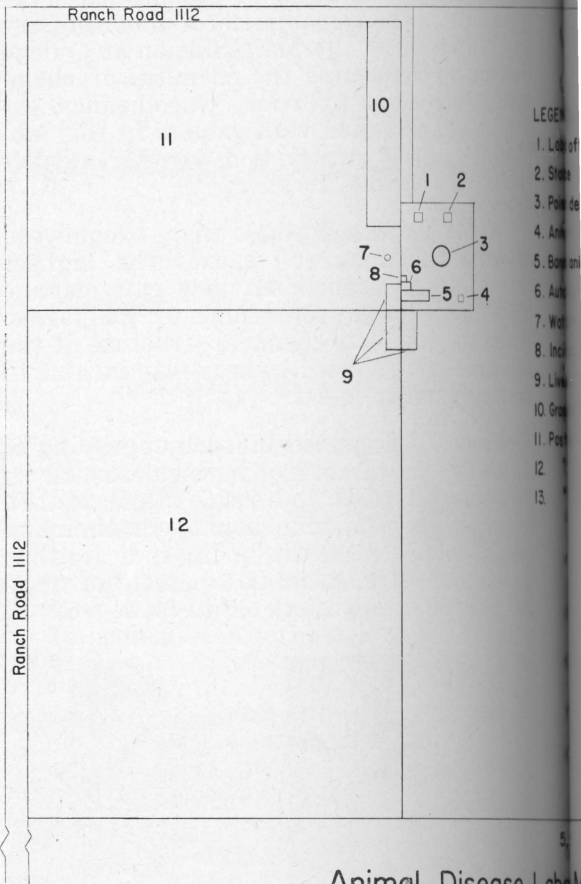
A thorough analysis of broomweed is being made in the Department of Biochemistry and Nutrition at the Main Station at College Station to determine the chemical or chemicals which cause abortion. One chemical extract already tested with rabbits in this laboratory caused death, and another extract caused the rabbits to abort.

With the knowledge that broomweed growing on sandy soil causes the highest rate of losses, ranchmen now can manage their herds to prevent some of the losses. When the complete chemical structure of the poison is known, herd owners may be able to prevent further losses.

Broomweed can be killed by spraying it with any one of several herbicides such as the ester of 2,4-D and 2,4,5-T and M.C.P. and 2,4,5-T proponic acid. Preliminary studies conducted in the spring indicate that the soil moisture should be 1 percent or more and the soil temperature 65 to 80 degrees F.



Extracts from broomweed are fed to domestic rabbits in an effort to determine the chemical which causes abortion in cattle.



LEGEND

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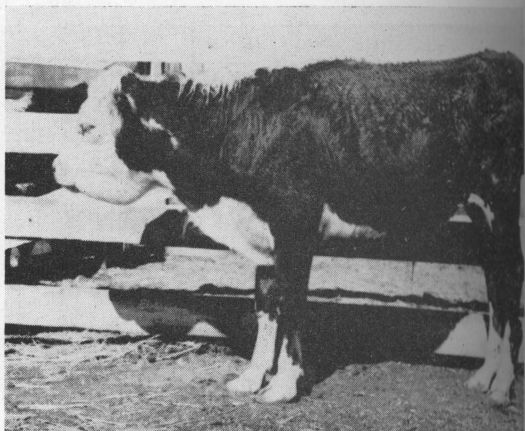
Office building	32' x 48'
	32' x 48'
Demonstration plot	110' diameter
	22' x 30'
Animal house	50' x 120'
	14' x 16'
	26' x 6' high



Scale
 |-----|
 600'

3,300'

Marfa, Texas



Research here has proved that "jaw and tongue trouble," as shown above, can be controlled if cattle are not allowed to consume large quantities of mesquite beans for more than 30 days.

The plants can be killed by spraying in the fall with Weedazol.

MESQUITE BEAN MALNUTRITION

A condition in cattle known as "jaw and tongue trouble" has been proved to result from cattle eating large quantities of the beans produced on mesquite trees. The affected animal's jaws and tongue become swollen, eating is difficult, they salivate, lose weight and are highly nervous. Losses along the Pecos River are estimated at \$100,000 annually, and heavy losses also occur occasionally in other areas of the State.

Tests show that management of herds so they will not be able to consume large quantities of mesquite beans for more than 30 days can reduce or prevent losses. Further study is aimed at developing improved methods of preventing and treating jaw and tongue trouble, and to find ways to use beneficially the nutrients of mesquite beans.

POISONOUS PLANTS

Since this laboratory was established many plants which are native to West Texas ranges have been proved poisonous to livestock, and management which will prevent or control livestock losses has been developed.

These plants include lechuguilla, whitebrush, careless weed, rayless goldenrod,

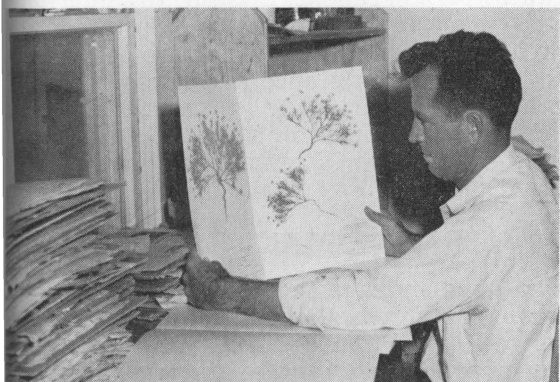


"Poison Island" is a selection of poisonous plants native to West Texas to show visitors to the Animal Disease Laboratory.

broad-leaved milkweed, horsetail milkweed, loco, peavine, garbancillo, desert bailey, ergot on tabosagrass, conyza, inkweed, blackbrush, perennial broomweed, carpet weed, yellow sweetclover, sacahuista, Jimmy fern, African rue, abnormal leafflower, paperflower, sartwellia, senecio, nightshades and cocklebur.

Some of these plants can be eliminated by mechanical or chemical means. However, production of more and better forage plants through range management is usually the best way of preventing losses of livestock from all the poisonous plants.

A herbarium, for demonstration purposes, is being developed here to show the poisonous plants and closely related species in West Texas.



A herbarium being developed here will show poisonous plants native to the area, and will be used in research.

SHIN OAK POISONING

The present number one problem in preventing losses of livestock in West Texas from eating poisonous plants, is the control of shin oak. A conservative estimate of annual financial losses due to cattle eating this plant is over \$10 million.

Research is underway seeking the chemical causes of death to animals and its control.

Studies at the Texas Agricultural Experiment Station at Spur already have proved that shin oak can be controlled with applications of herbicides, and that when shin oak population is decreased 20 percent there is a 100 percent increase in grass in the same location.

CRAZY CALVES

The cause of convulsions and deaths of baby calves which have occurred during recent years was found to be the result of brain abscesses caused by improper dehorning. When calves are dehorned with a hot iron, infection readily enters the burned tissue, and if the skull bone has been burned the infection enters the brain.

Ranchmen are advised that if they use a hot iron to dehorn baby calves they should prevent any burn to the skull bones.

GRASSES

This laboratory is cooperating in the statewide grass project of the Texas Agricultural Experiment Station to determine grass species, and individual strains of the different grass species, which are best adapted to drouth resistance and revegetation of ranges. Several of the grasses in test plots here show promise for the area. However, further testing will be necessary before seed are distributed.

RANGE MANAGEMENT

Range management practices which include water diversion dams, wire spreaders, range pitting and deferred grazing are being practiced on this laboratory for water and soil conservation. Gradual improvement of range conditions has resulted, even during drouth years.

STATE-WIDE RESEARCH

The Texas Agricultural Experiment Station is the public agricultural research agency of the State of Texas, and is one of the coordinated parts of the Texas A. and M. College System.

The Main Station and headquarters are located at College Station, with 21 substations and 8 field laboratories located throughout major agricultural areas of Texas. In addition research is conducted at 16 other locations in cooperation with the Texas Forest Service, Game and Fish Commission of Texas, Texas Prison System, the U. S. Department of Agriculture, University of Texas, Texas Technological College, Texas College of Arts and Industries and King Ranch. Some experiments are conducted on farms and ranches and in rural homes.

The Texas Agricultural Experiment Station is conducting about 425 active research projects, grouped in 25 programs which include all phases of agriculture in Texas.

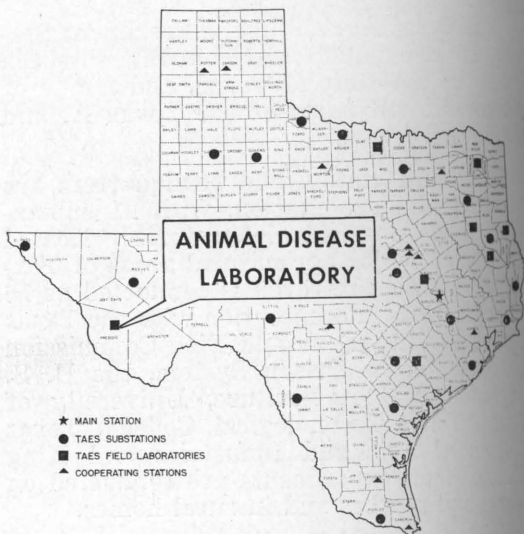
Research results are carried to Texas farm and ranch owners and homemakers by specialists and county agents of the Texas Agricultural Extension Service.

R. D. LEWIS

Director

College Station, Texas

AGRICULTURAL RESEARCH seeks the WHATS, the WHYS, the WHENS, the WHEREAS and the HOWS of hundreds of problems which confront operators of farms and ranches, and the many industries depending on or serving agriculture. The workers of this laboratory, along with those of the Main Station and other field units of the Texas Agricultural Experiment Station, diligently seek to find solutions to these problems.



FOR BETTER LIVING

Today all people have a stake in agricultural research. The quality and quantity of food, feed and fiber available for their welfare are dependent on the information developed through organized research.

The Texas Agricultural Experiment Station concerns itself with problems confronting, and likely to confront, farmers and ranchmen, rural homemakers, farm groups and representatives of other organizations depending on or serving agriculture.

Agriculture up to now usually has kept abreast of demand. But continued agricultural research is necessary to point the way toward maintaining and improving our productive resources; lowering cost of production; improving quality; expanding markets; devising new and better methods for growing, processing, distributing and utilizing farm and ranch products and better city and country living.

Researchers of the Texas Agricultural Experiment Station are dedicated to that aim. *Today's Research is Tomorrow's Progress.*