ANIMAL HUSBANDRY

The beef cattle and swine work is being done in cooperation with the Division of Animal Husbandry of the Bureau of Animal Industry, United States Department of Agriculture. As indicated in the preceding discussion of pastures, the Bureau of Plant Industry is cooperating in conducting some of the grazing work with beef cattle.

The livestock work, as such, was started in the fall of 1932. That being true, definite results of experimental work are not yet ready for reporting. Experiments of a very practical nature are being planned and carried on with both beef cattle and hogs.

There is a vast acreage of cut-over and marginal lands in the Coastal Plain region that should be bringing in some revenue from beef cattle production. To do this it is necessary to develop improved pastures at small expense and provide cheap feed crops to maintain the cattle during off pasture seasons and to finish cattle for the market.

The soil, climate and cropping systems in the Coastal Plain are ideal for hog production. To make this enterprise profitable, however, a year-round grazing system should be developed and cheap supplemental feeds provided.

During this period of return to normal conditions the farmers are finding it a decided advantage to make greater use of livestock in their farm program. It is essential from a subsistence point of view. A farm in the South without at least enough livestock to produce products for the family, is an unbalanced farm. Very often crops can be marketed through livestock to better advantage than otherwise. The Coastal Plain area is a great producer of roughage which fits in well with cattle production. The forage and feed crops (green legumes, oats, corn, peanuts, sweet potatoes, etc.) grown in this area make swine production very at-
tractive. These things are causing quite a demand for information relative to beef cattle, swine and dairy cattle. With these conditions and demands in mind, the livestock work at this Station is being planned and carried on so as to be of maximum benefit to the farmers.

**BEEF CATTLE**

The five main divisions of work with beef cattle may be designated as follows:

1. Veal herd for the production of veal calves.
2. Feeder herd for the production of feeder calves.
3. Feeder calves.
4. Steers on fattening experiments.
5. Beef bulls.
Since this work has been under way for only a short time and pastures for the different herds are in the process of being developed, the following discussion is necessarily in the nature of a progress report. Mention is made of pastures and supplemental feeds not as a recommendation but as information as to how these particular herds were handled with rather limited facilities.

**VEAL HERD:** Approximately 50 grade Jerseys and native cattle were assembled to make up this herd. The cows were bred to a purebred Hereford bull in the spring so that they would drop calves the following winter and early spring. The majority of the calves will be sold as veal calves and records kept that should be valuable concerning the possibilities of veal calf production in the Coastal Plain area. The best heifer calves will be kept for replacements and increase.

During the winter of 1932-33 the veal herd was carried through as cheaply as possible. The cows were put on bean fields after the corn was gathered and during February and March they were grazed a part of each day on green oats. On the first of April the herd was placed on permanent pasture and bred during April and May. The herd remained on permanent pasture until October 20 when the cows were again put on corn and velvet bean fields, after the corn was gathered, where they remained during the following winter months.

**FEEDER HERD FOR THE PRODUCTION OF FEEDER CALVES:** The feeder herd consists of approximately 35 grade Hereford cows and heifers. From this herd feeder calves are being produced for the pasture experiments.

The herd was wintered from December 13, 1932, to May 9, 1933, on two pounds of grain and nine pounds of peanut hay per cow per day. The grain mixture was as follows: Two parts of ground snap corn and one part of cottonseed meal. The weight of the cows averaged about 825 pounds each. The cows suckling calves lost weight during this period.
The cows were not turned on pasture until May 9 because the pasture was in the process of being developed and not enough early grazing was available to maintain the herd. The herd remained on this pasture until November 2, 1933, when it was transferred for the winter, to corn and velvet beans, after the corn was harvested.

The cows in this herd were bred to a purebred Hereford bull during the latter part of April and during May. The best heifer calves will be placed in the herd for increase and for replacements.

**FEEDER CALVES:** Fifty-one head of grade Hereford calves were obtained in the fall of 1932. These calves were wintered from December 6, 1932, to April 5, 1933, on two pounds of grain and four pounds of peavine hay per calf per day. The grain mixture was made up of two parts of ground snap corn and one part of cottonseed meal. Salt and mineral mixture was kept before the calves at all times. At the beginning of the period the calves averaged about 390 pounds each.

These calves were wintered over to be used in the cooperative grazing experiments, the results of which are reported under Lowland Permanent Pasture experiments in this bulletin.

**STEERS ON FATTENING EXPERIMENTS:** Fifty head of grade Hereford steers were taken off the pasture experiments in the fall of 1933 and were divided into three lots and placed on feed as follows:

**LOT A.** Grazing on corn and velvet beans in a field where nothing had been gathered.

**LOT B.** Feeding on whole snap corn (ears chopped in two), velvet beans in the pod (soaked 24 hours), and low grade peanut hay.

**LOT C.** Feeding on cottonseed meal and cottonseed hulls.
These fattening experiments ran into 1934 and the results will be included in future reports.

**BEEF BULLS:** Two purebred Hereford bulls are being maintained to breed the veal herd and feeder herd. These bulls are maintained as cheaply as possible to keep them in good growing and breeding condition.

In December 1933, 16 Milking Shorthorn bulls, two Polled Shorthorn bulls and one Shorthorn bull were placed at the Experiment Station to be used in breeding projects and demonstrations here and other points in the State. These bulls are being grown out and acclimated before being placed on these projects.

Plans are being made for a breeding project using a milking strain Shorthorn bull to breed to native cows in order to study milk production of dams. Comparisons are to be made with first and second cross daughters and a study of veal production with this cross.

**SWINE PROJECT**

Swine work was started in the spring of 1933 with the objects in view of determining a practical year-round grazing system, the pounds of pork produced per acre on the various crops, the pounds of pork produced per sow, the most practical time of farrowing pigs, and the necessary supplemental feeds. Eventually progeny testing will be carried out.

The spring litter of 46 pigs was weaned on May 6 and placed on mature oats where the pigs grazed and were fed small amounts of corn and skim milk. It seems that mature oats are one of the best feeds for hogs during that season when very few other grain or green crops are available. The pigs made satisfactory gains.

On June 17 the pigs were transferred from mature oats to Early Dent corn and green soybeans. The pigs ate very readily the green soybean vines and the immature corn.
Hogs grazing Grahoma sorghum and peanuts.
On July 10 the pigs were transferred from corn and green soybeans to corn and Spanish peanuts where they made fair gains.

On July 23 the pigs were transferred from corn and Spanish peanuts to grain sorghum (Grahoma, Sagrain and Hegari). The Grahoma variety apparently did best. The pigs made very good gains.

On July 31 the pigs were placed on corn and soybeans. The soybeans had just reached the dough stage. The Mathews variety gave very satisfactory results. The corn and soybeans were planted in alternate rows. The gains on this combination were good.

On September 11 the pigs were placed on corn and runner peanuts. The corn was planted every fifth row. The pigs were marketed from this field on November 2 and 16, respectively. The fall litter was weaned and placed on this field on November 17 and removed December 12 to another field of runner peanuts, corn and sweet potatoes. The pigs were marketed from this field in the spring of 1934. The corn and peanuts gave very good gains.

The sows are grazed on green oats during the winter and spring, and on mature oats during the late spring, and on green legumes during the summer and early fall. They are fed just enough grain to keep them in good breeding condition.

The swine experiments promise to give some very interesting and needful information concerning practical and economical production.

DAIRY CATTLE

A dairy herd of approximately 35 head of purebred Jerseys is maintained by the Station. One of the major projects in the dairy work is a study of milk and butterfat inheritance. Records are kept of milk and per cent butterfat production on every cow in the herd for every lactation. The comparison of the dams record will be made with that of her daughters. By so doing, accurate in-
formation will be gained as to the influence of the sire and dam on production of milk and butterfat. The herd is entered in the Cow Testing Association and the Jersey Herd Improvement Registry.

A portion of the herd will be bred to a purebred Milking Shorthorn bull to study the influence of that breed on milk production and to get a comparison of the production of the dams with the first and second cross heifers. Records will be kept of the feed consumption of the first and second cross calves from birth to maturity. A study will be made as to the value of the crossbred bull calves for veal.

Records are kept of the feed consumption of every cow in the herd. Practical demonstrations are being conducted as to the production of clean milk, feeding various amounts of grain and roughage, and the value of temporary pastures for both winter and summer. The herd is fed varying combinations of soybean hay, sorghum silage, ground snap corn, cottonseed meal, oats and wheat bran.

The average production of the herd for the year is as follows:

- Milk: 6,300 pounds
- Butterfat: 284 pounds
- Percent fat: 4.6