

facts are better known. There is no way to be assured of the uniformity of the bales except by seeing the cotton in the field. Separation of the good and bad cotton probably is the only effective way of discouraging the production of inferior fiber, which on the present basis tends to depreciate the value of all of the irrigated cotton.

Where the community production of one variety of cotton has been established, the classing of the cotton in the field becomes a practical possibility and opens the way to a just discrimination of fiber quality in primary markets, of which there is little prospect where many varieties are grown and the seed is mixed and mongrelized. With production based on one variety, the crop can be standardized by



FIGURE 64.—Effects of extreme conditions in reducing size of bolls. Full-size boll of Mebane cotton in comparison with small bolls produced under severe stress conditions in the Imperial Valley, Calif. (Natural size.)

reference to the conditions of growth. Working out these relations in the irrigated districts may be to the great advantage of the entire Cotton Belt, as leading to more general use of good varieties and to the production of uniform, standardized fiber.

O. F. COOK.

COTTON Quality Studies
Show Opportunities to
Adjust Staple Production

Cotton prices are affected by the quality as well as by the quantity of cotton produced. In the research program of the Bureau of Agricultural Economics the research on cotton marketing embodies two types

of study—technological, to determine the elementary physical properties of cotton fiber; and economic, dealing with supply and consumption in terms of quality and with the markets and marketing processes.

Data obtained in Georgia and a Texas-Oklahoma area, compared with results of a study of American mill consumption, indicate that these areas produce too much cotton seven-eighths of an inch and under, and too little cotton fifteen-sixteenths of an inch and above, in length. This situation may be attributed to the custom of local buyers of paying flat prices for all qualities in a given market. This serves as a rather effective discouragement to quality and an encouragement to quantity production.

In these areas the yields of cotton the past year of 1 inch and above in length suggest the possibility of producing satisfactory crops of cotton from fifteen-sixteenths of an inch to $1\frac{1}{16}$ inches in the uplands and from $1\frac{1}{8}$ to $1\frac{1}{4}$ inches in the more fertile valleys.

In several of the States practical programs are already under way in which the information gathered last year is being used to encourage production of cotton of better quality.

The studies have the enthusiastic support of the spinners, merchants and farmers, and the agricultural colleges of the Cotton Belt.

B. YOUNGBLOOD.

COTTONSEED'S Kernel Content and Components Are Basis for Grading Cottonseed crushers produce two major and two minor products from the seed. The major products are cottonseed oil and protein and the minor products are linters and hulls. Apparently if these variable major products could be grouped in order of increasing quantities, the grading of cottonseed would be simplified.

The oil and protein are contained within the kernel and the kernel is confined within the hull. But kernels and hulls may have variable moisture contents, and the hulls may be thick or thin, dense or light. The kernels may be well developed and full or poorly developed and shriveled. The season and the soil may be good or bad, conducive to high or to low oil development, the oil content of the kernels actually varying from 25 to 42 per cent or more. The same or other conditions may affect the protein development, and it actually varies in the kernels from below 25 to above 46 per cent. The kernels may vary from about 45 to 65 per cent of the total weight of the seed and the net kernel content of seed as received at the oil mills has been found to be as low as 35 per cent. In other words, some tons of cottonseed, as they arrive at the oil mills, contain only 700 pounds of kernels, whereas other lots may have over 1,300 pounds of kernels to the ton.

The value of a ton of seed may be measured by its kernel content even though a pound of oil is worth many pounds of protein, for nature has set up a natural correlation between the amount of oil and the amount of protein in the same seed. This relation is so consistent that it may be considered a rule that as the percentage of oil goes down the percentage of protein goes up, the values tending to balance one another. The net kernel content of the seed is believed to be the most accurate physical indicator of the quantitative value of cottonseed. It is difficult to make a perfect separation of kernels from hulls. Mechanical engineers are working on the problem, and when a machine is made by which the net kernel content of a representative sample of cottonseed can be discovered it will be possible for every seller and buyer of cottonseed to determine its quantitative value.