

respectively. Their microscopic examination reveals no spermatozoa internally, and in the testes the tubules are almost uniform in shape but small in size. Interstitial cells are very small and few in number. Thus the male gonads seem to be dormant as far as sexual activity is concerned during this part of the year.

From about the first week of March testes begin to increase in length and diameter, the changes being very gradual and the rate of increase very slow for about 20 days. Thereafter the male gonads increase in size at a very rapid rate throughout April and the first three weeks of May attaining their maximum growth during the last week of July, the average maximum volume being 147 c.mm. which is about 37 times greater than the average minimum volume. These external macroscopic changes seem to be correlated with the internal activity of the gonads leading to the production of mature spermatozoa. The tubules grow in size but lose their uniform shape. The interstitial cells correspondingly grow enormously both in size and number.

The regressive changes, the decline in the activity of the gonads, seem to be rather abruptly heralded; and before the end of August testes have decreased in size to a remarkable extent, the average volume being 15 c.mm. Through the whole of September and the first half of October there is a slow gradual decline leading to the attainment of the minimum size with which the cycle started.

Detailed observations including the study of the chromosomes will be published shortly.

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#### Lint Color in Asiatic Cottons.

IN a review of all the existent literature on the mode of inheritance of lint color of cotton, Ware<sup>1</sup> has shown that in all inter-varietal crosses in the New World cottons, expression of lint color can be explained by monofactorial hypothesis while in the interspecific crosses, the segregation for pigmentation is not clear cut and simple.

<sup>1</sup> *Journal of the American Society of Agronomy*, 24, 553.

The only references with regard to the behaviour of this character in the Asiatic cottons are by Fletcher<sup>2</sup> and Kottur.<sup>3</sup> The former just mentions that color is dominant over white, while the observations made by the latter on the interspecific cross between *G. herbaceum* and *G. neglectum* have pointed out that the splitting is nearer to 1:2:1 ratio than any other. But studies made by us at the Cotton Breeding Station, Coimbatore, on the progenies of the interspecific crosses between *G. obtusifolium*, *G. indicum* and *G. herbaceum* gave the interesting ratios of 9:6:1, 9:3:4, and 9:7 in the F<sub>2</sub> and F<sub>3</sub> generations. These lead us to formulate that the lint color in these cottons is governed by three pairs of factors. This assumption fits in with all the ratios obtained so far. A basic gene X seems to be essential for color production but its presence alone does not induce any manifestation of pigmentation unless it is in conjunction with either of factors K<sub>1</sub> and K<sub>2</sub>. The three broad color groupings observed in these cottons, *viz.*, brown, cream and white, thus seem to be the result of interactions between factors X, K<sub>1</sub> and K<sub>2</sub>. When all the three are present, the lint is colored brown, while a genetical constitution of either XK<sub>1</sub> or XK<sub>2</sub> results in cream coloration. The absence of both the factors K<sub>1</sub> and K<sub>2</sub> or the basal factor X appears to be responsible for white color. Minute shades of differences are also noted among these phenotypes. Further work is under way to test if they are produced by modifying factors and if the results of all possible crosses will be in consonance with the above assumption.

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#### A New Method for the Separation of the Two Components of Amylase.

IN recent years, several methods,<sup>1-5</sup> some very elaborate, have been proposed for the separation of the saccharogenic and the dextrinogenic components of malt amylase.

<sup>2</sup> *Journal of Agricultural Science*, 2, 282.

<sup>3</sup> Imperial Department, *Agricultural Memoirs*, Botanical Series, 12, 125.