HYBRID INTENSIFICATION OF PLANT HEIGHT IN COTTON
AND THE RELATIONSHIP OF NODE NUMBER AND
INTERNODAL LENGTH TO THE PHENOMENON

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Marked hybrid vigor or intensification is expressed in certain organs or parts of the cotton plant when some of the species are crossed, but no pronounced display of the phenomenon is known to appear for any of the characters when the crosses are made among varieties within a species.

Balls (1) on hybridizing species observed intensification in many characters. The more obvious evidence of the trait was shown in plant height, time of flowering, length of lint, and size of seed. In this connection, he says, "The most striking feature is the intensification of certain characters which results when two botanically dissimilar cottons are crossed together."

Cook (4) crossed Kekchi, a Guatemalan cotton similar in type to the Upland (Gossypium hirsutum), with Egyptian (G. barbadense) and secured in the conjugate generation intensification of several characters. On the other hand, no extra vigor was shown when Kekchi and Upland were crossed, but rather a weakened or suppressed condition of the characters studied. Cook says, "Increased vigor and fertility are commonly found in crosses between narrow strains, the so-called 'elementary species' or 'biotypes' used in Mendelian experiments, but such crosses of closely related varieties of cotton do not appear to give any such definite phenomena of intensification as do hybrids between widely different types." He also says, "Suppression and intensification of characters are most pronounced in the first generation and tend to disappear in later generations."

Kearney and Wells (7) found no intensification in crosses between Egyptian varieties. The writer, in genetical studies of several qualitative characters which involved extensive crossing among Upland varieties, did not observe any pronounced increase of vigor in either conjugate or perjugate hybrids.

Brown (3) reported hybrid vigor from a cross of two inbred strains coming from the same variety. The strains, however, had been selfed for three generations and showed decreased vigor. Heterosis

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2Associate Agronomist.

3Reference by number is to "Literature Cited," p. 801.