

18. The beta member of A<sup>b</sup> complexes.

The association of crossing over with the isolation of the alpha (pale-acting) element of A<sup>b</sup> (Ecuador extraction), establishes that this element is the left-most member of the A<sup>b</sup> complex and, from the fact that A<sup>b</sup> has an overall purple effect on pigmentation, provides a basis for the inference that the member on the right (beta) is an allele with purple effect. Since both A<sup>b</sup> and its derivative alpha produce a dominant brown pericarp effect, an attempt was made to isolate the beta component in appropriately marked individuals on the assumption that this element, like the type A allele itself, has a red pericarp effect. In preliminary studies two individuals with red pericarp were isolated, both of which carried marker genes which indicated that there had been an associated crossover between the markers T 2-3d and sh<sub>2</sub>, a segment of about seven units and including the A locus. Moreover the markers carried by these derivatives are those expected if beta is located to the right of alpha in the A<sup>b</sup> complex. More recently, eight additional derivatives with red-pericarp phenotype have been isolated in similar experiments and all appear to be crossovers but are subject to further critical tests to determine whether they carry the interchange marker and to test for contamination.