

ATAVISM IN THE WATERMELON.

JOHN H. SCHAFFNER.

In the summer of 1895 I noticed a peculiar variation in the leaves of a watermelon vine, growing in a patch in Clay county, Kansas. The plants were of the variety known as the "Georgia Rattlesnake," and, excepting the single plant mentioned, were of the usual type.

□ The leaves of the watermelon seem to be quite constant in form. They are usually described as palmately five-lobed, the lobes being mostly sinuate-pinnatifid, with all the segments obtuse (Fig. 1*b*). But in this plant the lobed condition of all the leaves was almost entirely absent, the border being only moderately undulate (Fig. 1*c*).

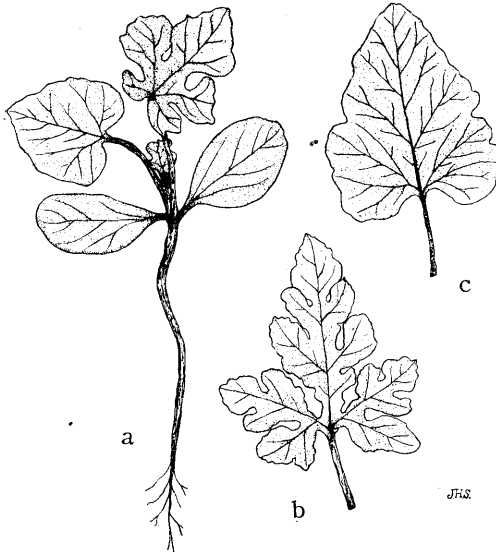


Fig. 1. *a*, A young seedling of the usual form.
b, Leaf of usual form.
c, Leaf of special form.

Some of the seed from this individual were planted in 1896, and the same leaf peculiarity was reported. The form has been successfully cultivated every year since that time, although it was usually planted in patches with the ordinary kind and much cross-pollination must have resulted.

Whether this condition of entire leaves is common in the watermelon I do not know, but I regard it as a good example of atavism, or reversion to a more primitive type. Such reversions

may perhaps be of frequent occurrence in the species. It is a well-known fact that the leaves of many fossil plants from the Cretaceous have entire borders, while the modern representatives of the same genera are often serrate, denticulate or lobed. Turning now to the seedling of the ordinary watermelon (Fig. 1*a*), we find that the leaves develop in succession from the entire to the mature, lobed form. The cotyledons are oval and entire, while the first leaf is almost an exact counterpart of the variety under consideration. In the second leaf the lobed condition is

beginning to appear while the third leaf would have the normal form of the mature plant. On this account I regard this as a case of atavism rather than an ordinary mutation ; or it is probable that the watermelon embryo, in passing from entire to lobed leaves, is repeating some of the past stages in the history of its race. Striking variations, mutations and reversions should be carefully studied and recorded, since it is by them alone that many of the problems of evolution can be solved.
