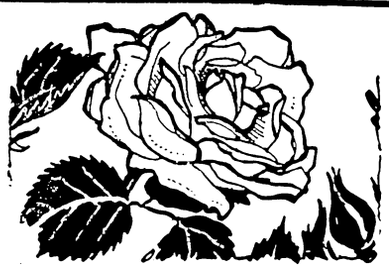
GENETICS

NATURE RAMBLINGS

by Frank Thone



Unnatural Selection

QUALITIES that man values in cultivated plants are the very ones that would insure failure to the species concerned under conditions of natural competition.

In vegetables like tomatoes, eggplants and squashes, what the gardener wants, and what he selects for in breeding, are maximum of flesh and minimum of seeds. Yet in nature the main objective of the fruit is to produce and protect the seeds, and the more of the latter the better, from the plant's own viewpoint. A "perfect" tomato or eggplant, with solid flesh and few or no seeds, would not be able to hold its own in natural competition with the primitive, half-weedy ancestral species, with fruits hardly worth the plucking but with abundant seeds.

Grains are valued for the large number of seeds per ear, to be sure, but the advantage that this might bring to highly improved cultivated varieties is offset by the breeder's and grower's requirement that all the seeds be tightly attached to the central stem, so that the ears may reach the threshing machine or corn sheller with a minimum of loss. The opposite condition, in which the ears lose their grains easily, is called "shattering", and is considered a highly undesirable character. Yet wild and half-wild grains, that succeed best growing without the aid of man, are all shatterers; that is how they insure dissemination of their seed.

Producing the seed-bearing shoot or stem is ruinous to many kinds of horticultural plants: it splits cabbage heads, makes radishes pithy, produces a bitter taste in lettuce. So we do our best to enforce an almost suicidal birth control on such plants. Without the seed grower's midwifery, most of our choicest varieties would die out in a couple of years.

We do carry this suppression of seeds to its ultimate and sterile conclusion in the case of our most prized flowers. Double flowers are preferred to single by almost everyone. (If you doubt that, just try to buy a bunch of single roses at a florist's!) Yet in the production of doubling, the stamens and carpels, which are the reproductive organs of the flower, are converted into, or replaced by, the extra petals.

It is the same way with fruits. Seedless oranges are kings of the market, and horticulturists are now rejoicing because their dream of decades, seedless watermelons, seems to be nearing realization. Yet without the art of grafting, in the case of the oranges, and the use of growth hormones, in the experimental seedless watermelons, such fruits could not be obtained.

Even in fruits that produce seeds, like apples, pears, peaches, plums and cherries, we propagate the thousands of trees in our orchards by grafting known varieties. "Seedling" is a name of scorn, or at best of hazardous venture, in the tree nursery.

Science News Letter, April 25, 1942