

## 2. Chromosome aberrations from polymitotic.

In 1958, progeny were grown from 21 polymitotic plants crossed as ♀ with inbred A188. The number of progeny varied from 1 to 51, but 13 had 10 or more. For the seven cultures that had one or more semisterile or low sterile plants, the numbers were: 1 in a total of 9, 1 in 12, 2 in 33, 2 in 44, 3 in 28, 4 in 51, and 5 in 29; a total of 18 partially sterile plants. Eleven of the partially sterile (P.S.) plants were crossed on inbred A188. All but two segregated for P.S. in the next generation. Fertile plants from selfs of P.S. plants were testcrossed on normal to establish lines homozygous for the change. Studies were resumed after several years. Only seven of the lines that continued to segregate for P.S. plants were continued. Two lines that had plants with about 25% sterility were tested extensively without obtaining the homozygotes. Three homozygous lines were established. Two that traced back to the same original po plant had interchanges. One is T<sup>4</sup>-7, the other a T<sup>7</sup>-9. The third line is probably an inversion, since crosses with the chromosome identification set of interchanges give only a ring of 4. The results indicate that in polymitotic plants interchanges and other chromosome changes that can be recognized by partial sterility in progeny from crosses with normal do occur, probably at meiosis. They also suggest that different P.S. plants from the same po plants may be separate events.

The results reported here are only from tests in which partial sterility was transmitted through the pollen in generations subsequent to the first one.

If the experiment is repeated, tests for ♂ and ♀ transmission should be made to answer the question: do pollen abortion (pa) type changes also occur in polymitotic plants? As pointed out in M.N.L. 45: 133 (1971), certain of these might have a practical value in the use of male-sterility in the production of hybrid corn.

Chas. R. Burnham

## 3. Chromosomal interchanges from colchicine treatment.

In 1968, Neubauer and Thomas (Crop Sci. 6:209-210) reported that, when solutions were made with different commercial lots of colchicine,