7. A new character, tinged, in chromosome 10.

A new seedling character from early generation selfs in the corn breeding program has been tested with a partial series of interchange lines. The seedlings are pale green in the tips of the leaves. This past summer the plants were pale green to maturity. It is closely linked with T5-10 (5290), but independent of T5-7e; hence it is probably located in chromosome 10. A test for allelism with g_1 is needed.

C. R. Burnham

8. Propionic acid cotton blue stain.

The addition of a drop or so of Watkins cotton blue stain before adding the cover slip to a preparation of spore quartets well-stained in propionocarmine was found to greatly improve the definition of cell walls and the nucleolar material was easily distinguishable. Also the spores remain as quartets within the original spore-mother-cell wall much better. The cotton blue stain used was from an old bottle in the lab made up many years ago, and was highly viscous.

A new solution, made up from the formula given in Gray is:

25cc distilled deionized water

25cc glycerin

25 gm. phenol

25cc lactic acid

This was not viscous and did not give the results obtained with the old stock. 100cc of glycerin were added to the formula and, after mixing, the solution was boiled very slowly until a fourth of the mixture was boiled away. After cooling, 1 part of stain was mixed with 2 parts of propionic acid. This solution still is not equal to the old stock in its ability to stain the cell walls but it does hold the spore quartets together. Some destaining is possible if steam heat is used. If the quartets reject destaining, less propionic cotton blue must be used. On the other hand if destaining is too drastic, not enough stain has been used.

Joseph Neubauer

9. An improvement in the aceto-carmine smear technique.

Corn anthers for pachytene, diakinesis or metaphase I analysis are removed from the acetic alcohol killer and

placed for a few minutes in 20% acetic acid before the regular staining procedure. The measurable diameter of the cells increases by 70 to 80%. Considerable improvement was noted in the spreading of pachytene chromosomes in sporocytes that were relatively poor spreaders. Prolonged exposure to the acetic acid results in loss of affinity for the stain. Similar but less pronounced effects were noted in barley. Pre-treatment with higher percentages of acetic acid was better in some cases.

Joseph Neubauer

10. Improved propiono carmine stain.

A number of years ago a worker in the radiation genetics lab noted that a batch of propiono carmine unintentionally refluxed for a much longer time seemed to give better staining. When this came to our attention recently, we prepared it as follows:

0.5 gm per 100cc. of 45% propionic acid

reflux for 6 to 8 hrs.

cool and filter

This stain gives much better results for corn than any that we have prepared by other methods. Dilution with 45% acid may be necessary if the cytoplasm is stained too heavily, as in the tomato.

John T. Stout

11. Variable transformer for use with microscope lamp.

For a microscope lamp using a spotlight 100W, 120V, G16 ½ bulb, or for one that uses a 100W 120V T 8 ½ bulb, CC13 filament, we have used a Powerstat variable autotransformer:

Type 2PF10 input 120V, 60 cycle

output 0-130V, 1 amp.

It is manufactured by the Superior Electric Co., Bristol, Conn. A 1 ½ or higher ampere unit would probably be better.

C. R. Burnham