

2. The complexity of maize anthocyanins.

Anthocyanins from leaf sheaths were extracted with 1% HCl in MeOH, concentrated in vacuum at 30-40°C and freeze dried. The freeze dried material was then streaked on a cellulose plate. The chromatogram was developed in BAW solvent. Four intense purple bands and a weak orange-pink band were obtained. Each band was eluted and rechromatographed in BAW and other aqueous solvents such as aq-HCl and HAC: HCl: H₂O (3:1:8 v/v). In each case several bands were obtained from each individual eluate. This suggested that perhaps each band obtained with the BAW solvent contained more than one anthocyanin and required further purification or that the anthocyanins are labile in acidic solvents, or both. We thus extracted more anthocyanin with absolute methanol and concentrated it as before. Subsequent procedures were all carried out in neutral solvent systems except for the final step. Chromatograms were developed with BEW* solvent (4 n-BuOH: 1 Ethyl acetate: 5 H₂O). Three bands were obtained: band A purple, band B bluish-pink and band C pink, respectively. Each band was eluted and then developed with a second solvent EEW* (3 Ethanol: 1 Ethyl acetate: 1 H₂O). Band A and B each resolved into three bands, and band C into four bands. The stability of the pigments in the BEW and EEW solvents was confirmed by rechromatographing each eluate separately and redeveloping it in the same solvent system. They proved to be quite stable. Each of these bands was then eluted and developed in two directions. The solvent employed for the first direction was BAW, while for the second direction HAC: HCl: H₂O (15:3:82 v/v) was used. The chromatograms obtained showed that each individual band can be further resolved into at least 6-12 spots and characterized by different R_f values and color intensity.

As the anthocyanins were extracted and developed in such a way to minimize acidic degradation, this experiment reveals that:

- a) Maize anthocyanins are labile in acidic solvents during extraction.
- b) The four intense color bands (or anthocyanins) obtained from the BAW solvent were not simple monoglycosides, for each band

*Solvents developed by Dr. D. B. Mullick

could be further resolved into several anthocyanins.

- c) The simple monoglycosides obtained by other workers are probably products of acidic degradation of the pigment complex.

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1. Nuclear cycle - a correction.

In our previous contribution (MGCNL 42:175-178, 1968) we presented incorrectly the data of Clowes (1965). The correct data attributed to Clowes in our Table should read:

	"Cap. initials	Quiescent center	stele just above quiescent center	stele 200u from quiescent center
T	14	(174)	22	23
G ₁	-1	(151)	2	4
S	8	9	11	9
G ₂	5	11	7	6
M	2	(3)	2	4

Values in parentheses are derived from a value of T obtained by metaphase accumulation."

Clowes, F. A. L. 1965. The duration of the G₁ phase of mitotic cycle and its relation to radiosensitivity. *The New Phytologist* 64:355-359.

G. R. Douglas

2. Temperature and nuclear cycle in maize root tips.

Douglas reported (MGCNL 42:175-178, 1968) on the nuclear cycle in root tips of 'Seneca 60' at 28°C. These studies have been extended to undertake an examination of some of the factors which might influence the duration of the components of the cycle. Hereditary and environmental factors are being considered. We report at this time data from three temperatures, 20°, 30°, and 35°C, respectively.