

normal intercellular septa between the nuclei should have been present (Figs. 1, 2). Nuclei in these cells were either in interphase or in various division stages, but were either synchronous or not (Figs. 2, 3, 4).

Relatively scanty literature available to-date on the subject reflects the rarity of the phenomenon of the multi- or the polynucleate condition of the pollen mother cells in *angiosperms*. Further, its occurrence only in one out of 82 lines also rules out the possibility of its being a general feature among *Triticales*. Again, it cannot also be considered as fortuitous in view of its presence in more than one plant of the line in which it was discovered.

Polynucleate condition was reported by Matsura (cf. Maheswari¹) in *Phacellanthus*. It was also reported in two haploid plants of *Phleum pratense*,² in which there were 30 nuclei united to form what are called plasmodia or "syncytes". In *Trillium erectum*, Stern³ reported as many as 32 nuclei in one single cell. However, there were no cells with more than 6 nuclei in the present material, and, presumably, this is a new record for *Triticales*.

According to Matsura,¹ they result from the fusion of adjacent cells by dissolving the intercellular walls. However, it is not explained why the intercellular septa gets dissolved and if it did, at what stage of the nuclear division. Moreover, it is also not very clear from this study. Nevertheless, it may be supposed that they arise as a result of failure of cytokinesis following nuclear division during one or two premeiotic-mitotic cycles in the sporogenous tissue.

Polynucleate pollen mother cells were more predominant in hybrids and haploids^{2,4} and they were attributed to innate "unbalance" in the cell. Rees⁵ has established that the chromosomes, both in form and function, are bound by genetic regulations. Mitotic sequences including cytokinesis may not, therefore, be exceptions. Then the arrest of the cell-wall formation after the karyokinesis at premeiotic stage might be supposed to be the function of the gene or gene system. But the obvious heterogeneity between the pollen mother cells in the sporogenous tissue in the matter of nuclear composition might be an outcome of the inconsistent manifestation of the relevant genetic system. This kind of functioning of the gene is possibly due to the accumulation in homozygous condition of the deleterious recessives in the *Triticales* genotype and the

likely variation in the manner of their interaction with the given environment in the background of *Triticum* and *Secale* genomes which oppose each other in their breeding systems.

Apparently, polynucleate condition, whether occurring through the failure of cytokinesis or through the disappearance of intercellular wall, is rather a rare phenomenon. Yet when it occurs, it may have some evolutionary significance, for it may lead to the development of higher forms through the polyploid gametes.

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INHIBITION OF ABSCISIC ACID INDUCED CHLOROPHYLL DEGRADATION BY POTASSIUM

ABSCISIC acid (ABA), the best characterised naturally-occurring, senescence-promoting, abscission-accelerating and growth-inhibiting hormone, now ranks in importance with auxins, gibberellins, and cytokinins as a plant growth-controlling factor.¹ An interaction between ABA, auxins, gibberellins and cytokinins has been reported in several systems.¹⁻⁴ To our knowledge, almost no work has been done on interaction between ABA and nutrient supply. This report describes the reversibility of one of the ABA effects (promotion of chlorophyll degradation) by exogenously added potassium.

Ten-millimeter leaf discs were punched from the mature leaves of *Brassica juncea*. Separated leaf discs, in lots of 10, were placed in petri-dishes containing a single layer of filter-paper moistened with 5 ml of distilled water or an equivalent amount of the test substance in aqueous solution. After incubation in dark at 28° C for the desired time (Table I), the chlorophyll of five discs was extracted with 10 ml solution of 80% acetone and the optical density of the extract measured at 665 nm with the help of a Hilger's spectrophotometer.