

An Anomalous Megagametophyte of *Alysicarpus vaginalis* DC.: Further Evidence of a Criticism of Sareen and Wadhwa (1981)*

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The present paper describes an anomalous megagametophyte of *Alysicarpus vaginalis* DC. of the tribe Hedysareae of the Papilionaceae. The normal megagametophyte of *A. vaginalis* is monosporic, eight-nucleate with Polygonium type of development. Normally the functional megaspore undergoes three mitotic divisions resulting into eight nuclei which are arranged into two groups of four each. Three nuclei from the micropylar quartet organize into the egg apparatus consisting of the egg and two synergids. The cells of the egg apparatus are large, elongated, and pear-shaped. The fourth nucleus from the micropylar quartet forms the upper polar nucleus. The antipodals, formed from the three nuclei of the chalazal quartet, while the fourth nucleus from the chalazal quartet forms the lower polar nucleus. The antipodal cells, within the narrow protruding chalazal end of the megagametophyte are situated one above the other in a linear fashion or form a pyramid. The egg apparatus and two synergids in which there is no evidence of filiform apparatus and about the same size. Both the polar nuclei move to the upper half of the megagametophyte and there they do not fuse but lie side by side and most probably remain in this stage till fertilization.

At one instance a peculiar megagametophyte was noted in *Alysicarpus vaginalis*. In this megagametophyte three nuclei from the micropylar quartet organized into the egg apparatus consisting of the egg and two synergids. The cells of the egg apparatus are large, elongated, and pear-shaped. At the chalazal end five cells were observed. They are arranged into three tiers (2+1+2). However, in this anomalous megagametophyte the polar nuclei were missing. It is every possibility that the fourth nucleus from the micropylar quartet might have shifted to the chalazal end, instead of forming the upper polar, it might have contributed to the additional cell. Fourth nucleus of the chalazal quartet instead of migrating to the upper half of the megagametophyte might have settled down and formed the fourth cell. As

a result of which at the chalazal end (at the usual position of the antipodals) five cells are seen. In this anomalous megagametophyte the polar nuclei are missing. The absence of the polar nuclei was also recorded by the author (1975) in *Phaseolus aconitifolius*. It was the failure of Sareen and Wadhwa (1981) to trace out such an important anomaly in the megagametophytes of *A. vaginalis* which prove their superficial and misleading observations. This was also pointed out earlier by the author (1974, 75a, b, 78, 86, 2001, 06).

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