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A Review :

Superposed multiple megagametophytes – trisporic development in *Cyamopsis psoralioides* DC. – A record for the angiosperms : Further evidence of a criticism of Maheshwari (1950), Johri (1963) and Rembert (1967a - Ph.D. Thesis, 67b, 69, 71)

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Cyamopsis psoralioides DC., is a member of the Papilionaceae showed at one instance a linear tetrad of megaspores, where the chalazal three megaspores found functional, while the micropylar one lost its potentiality, leaving behind its remnant. Thus resulting into the superposed multiple megagametophytes. The upper megagametophyte is developed up to the four-nucleate stage. The middle megagametophyte developed six nuclei, arranged in two groups, four at the micropylar end and two at the chalazal end. The chalazal megagametophyte developed three antipodal cells. Thus resulted in the trisporic in origin.

Key words : Embryology of the Angiosperms

Battaglia (1955) considers the concept of the spore and emphasizes that the term should be limited to a cell produced by regular or irregular meiosis, originating in the sporophyte and giving rise to a gametophyte. Battaglia (1951) discusses the importance of the position of the megaspore nuclei in determining the final form of the megagametophte. He states that "natural modification" in megasporogenesis determine the morphology of the gametophyte. This is an important point, and its implications should be realized. Megasporogenesis culminates with the production of megaspores.

Coulter (1908) was the first to make a clear distinction between divisions which formed megaspores, and divisions that produced nuclei of megagametophytes. This, as it turned out, was a very important distinction, and separates the meiotic divisions leading to megasporogenesis from the mitotic divisions leading to megagametogenesis.

A generalized or hypothetical (ancestral) pattern may be postulated as consisting of four megaspores in linear arrangement. Any one of these megaspores has equal potential for maturing into a megagametophyte. Depending on the number of megaspore nuclei taking part in the development, the megagametophytes of angiosperms has been classified into three main types: monosporic, bisporic and tetrasporic (Maheshwari, 1950; Johri, 1963). In the first only one of the four megaspores, in the second two megaspore nuclei, and in the third all the four megaspore nuclei take part in the development of the megagametophyte.

Rembert (1969) stated that "In no case is more than one megaspore known to function in this family-Papilionaceae". However, findings of Jonsson (1879-80) and Guignard (1881) make it very clear that Rembert's (1967a – Ph.D. Thesis, 67b, 69, 71) knowledge in the field is inadequate. Bisporic development in *Laburnum anagyroides* (Rembert, 1966), in *Wisteria sinensis* (Rembert, 1967b) as well as in *Pueraria lobata* (Rembert, 1969) was also noted by Rembert (1966, 67b, 69) under such condition his this statement is contradicting. Present work as well as the past extensive work of the author (1973a, c, 74b, 75a, c, d, g, h, i, j, k, n, 97, 2000, 06) made it very clear that the statement of Rembert (1969) is misleading.

Trisporic development of the megagametophyte is recorded for the first time by Salgare (1973a, c, 74b, 75a, c, d, g, h, i, j, k, n, 97, 2000, 06) which has no place in the present classification of the megagametophytes of Angiospems (Maheshwari, 1950; Johri, 1963) which had escaped from the eyes of the embryologists. This is a weakness of the classification of the megagametophytes of Angiosperms and needs its revision. Trisporic development has no place in the megaspore tetrad patterns formulated by Rembert (1967a - Ph.D. Thesis, 67b, 69, 71). This proves that his (1967a - Ph.D. Thesis, 67b, 69, 71) system is imperfect and needs its revision.