A PECULIAR EMBRYO-SAC IN PEPEROMIA PELLUCIDA.—During a preliminary study of the development of the ovule and embryo-sac of *Peperomia pellucida*, I was struck by certain remarkable peculiarities, which seemed to be perfectly constant, and while all the details have not yet been worked out, it is evident that in this plant we have a form which differs remarkably from the usual Angiospermous type.

The origin of the embryo-sac shows nothing unusual, but after the first division of the primary nucleus a difference is manifested. The young embryo-sac is small, and broadly oval in outline, with a relatively very large nucleus. After the first division of the latter, the two daughter-nuclei remain close together, and after the next division, the four resulting nuclei are arranged at equal distances from each other, very much as in the ordinary tetrad-division of spore-mother-cells. This stage is followed by one with eight nuclei, arranged equally about the periphery of the sac, which is completely filled with granular cytoplasm without the usual central vacuole. Absolutely no trace of the polarity, so characteristic of the usual embryo-sac, can be detected, nor is there any sign of a definite egg-apparatus, of antipodals, or of polar nuclei. About this time the central vacuole is formed, and soon afterwards another nuclear division takes place, resulting in sixteen free nuclei, distributed equally about the periphery of the sac, in the rather thick cytoplasmic layer.

Whether in any case more than sixteen nuclei are present before fertilization remains to be seen—nor is it yet quite clear just what is the origin of the ovum.

That the structures here described are formed *before fertilization* is not to be doubted. The closely set flowers make it very easy to follow the successive stages in longitudinal sections of the flower-spike, and unbroken series of stages have been repeatedly followed.

The further development also presents some apparent anomalies, but these have not yet been studied with sufficient care to warrant any positive statements.

The material used was collected at the Royal Gardens, Kew, and my sincere thanks are due to the Director for this, as well as much other material.

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DRESDEN, *November*, 1899.

Campbell, Douglas Houghton. 1899. "A peculiar embryo-sac in *Peperomia pellucida*." *Annals of botany* 13, 626–626.

<https://doi.org/10.1093/oxfordjournals.aob.a088763>.

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