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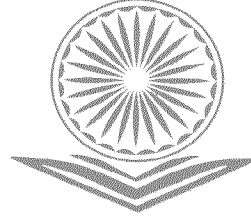
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## 15. Embryology of *Mimosa pudica* Linn

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### Abstract

The Embryology of *Mimosa pudica* Linn. was studied. It is observed that ovules are anatropous, bitegmic and crassinucellate. Embryo sac is polygonum type, endosperm is abinitio nuclear. Endosperm shows haustoria. Endosperm is mostly used by developing embryo.

### Introduction

Embryology is a tool for taxonomic studies. Considerable embryological investigations are carried out in India. Narasimhachar 1948., 1951, Dnyansagar 1951, Ugemuge 1982, Rao 1983, Steyn E.M. A and Smith, G. F., 2001, Tantawy E.M, Khalifa SF, Hamed KA, Al Azab HM (2005), Ahlam A., et. al. 2013, Rajurkar, A.V., Tidke, J.A and Jadhav, S. S. 2013, *Mimosa pudica* Linn. embryologically investigated by Narasimhachar but many of the aspects are missing. Hence the embryological work has been undertaken.

### Materials and Method

The plants of *Mimosa pudica* Linn. were collected from the Botanical Garden of Maharaja Sayajirao Gaikwad College, Malegaon Camp. The flowers and fruits grow well from August to November. The material was collected at 9 am. in the morning. The material was fixed in FAA (Formalin Acetic Acid Alcohol) for embryological studies; dehydration was done by using different grades of alcohol. Usual methods of embedding were followed. Paraffin blocks were cut on Cambridge Rocking type of microtome. The sections were stained with Iron - alum - haematoxylin and destained in a saturated solution of Picric Acid. Slides were passing through xylol, and then slides were mounted in Canada Balsam.

### Result and Discussion

Ovule is crassinucellate, bitegmic and anatropous. This character is shared by several taxa of the family Mimosaceae Narasimhachar 1951, Davis 1966; however, states that ovules may be hemianatropous to anatropous. In present study a rudimentary funicular obturator was

observed.

In the present study the micropyle is organised by both the integuments. There is formation of exostome and endostome. Which are not in one line- Narasimhachar 1951, does not describe the formation of exo and endostome. Embryo sac development is of polygonum type which has been confirmed in the present study. Narasimhachar (1951) reported occasional presence of twin Embryo. The reserved food material is in the form of starch which tested histochemically.

In the *Mimosa pudica* Linn. endosperm development is nuclear type. Later on Embryo sac consists of 2/3 cellular and 1/3 coenocytic free nuclear endosperm (Narasimhachar 1951). However it seen that the lower end of the endosperm also becomes cellular. Leaving only bulbous endosperm, haustoria with central vacuole which is pointed at the chalazal end. Haustorial processes, simple and tubular or with lateral processes are reported in several taxa investigated by Narasimhachar (1948), Dnyansagar (1949, 1954c & 1958) and Johri and Garg (1959).

### Conclusion

The ovules in *Mimosa pudica* Linn. are anatropous, bitegmic and crassinucellate. Embryo sac is polygonum type. Endosperm is abinitio nuclear. Endosperm shows haustoria. Mostly the endosperm is utilized by developing embryo.

### Photoplates

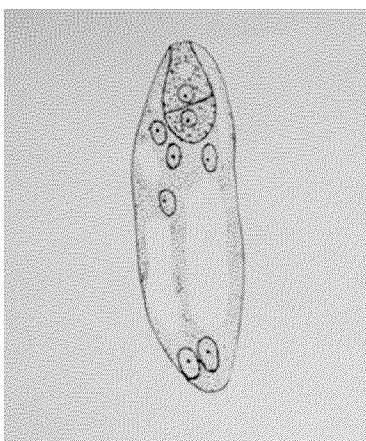


Fig. 1

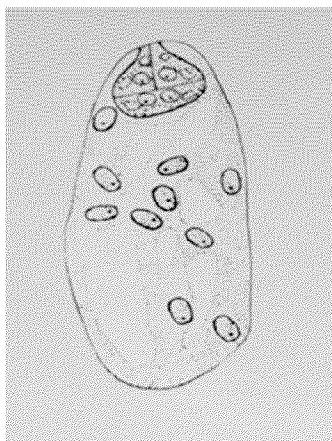


Fig. 2

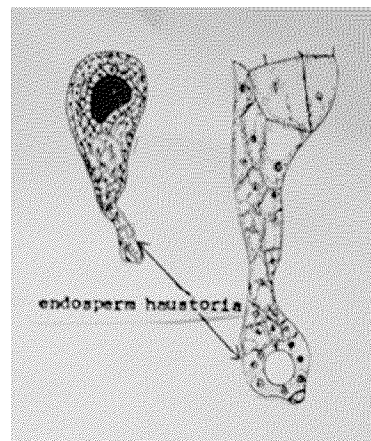
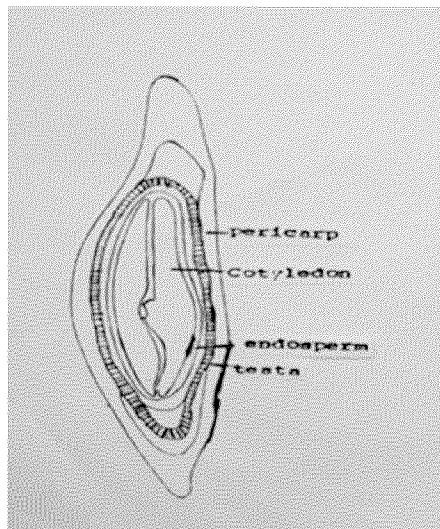
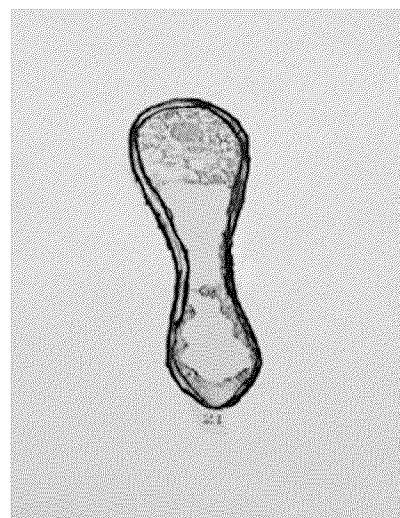


Fig. 3 & Fig. 4



**Fig. 5**



**Fig. 6**

Fig. 1. - L.S. of Embryo sac showing a 2 celled embryo and 6 free endosperm nuclei

Fig. 2. - A 4 celled proembryo and 10 free endosperm nuclei

Fig. 3. - L.S. embryo sac at cordate stage of embryo showing cellular and haustorial endosperm

Fig. 4. - Chalazal part of the embryo sac with cellular haustoria with bulbous base

Fig. 5. - T.S. of mature fruit showing a dicot embryo and few layers of endosperm cells

Fig. 6. Narasinhachar fig. number 21 showing embryo sac consist of 1/3 cellular and 2/3 coenocytic free endosperm nucleus

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