

# *Cereus hexagonus* Mill. of Cactaceae - a major source of pollen for honey bees

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**Key-Words-** *Cereus hexagonus*, Pollen source, Honey bees.

TWO hundred pollen loads of *Apis cerana* var. *indica* obtained during the month of August, 1994 from different colonies of a private apiary at Nandirajuthota village of Bapatla mandal, Guntur district, Andhra Pradesh, were analysed for their pollen contents.

The pollen foraging was carried out by the honey bees during dawn and very early morning hours (between 4 and 6 AM). The homing bees were caught before they could enter the hive and the two pollen loads on their hind legs were removed by gentle tapping on to a slip of white paper. The pollen loads were then stored in separate paper packets and the date and time of collection were noted. This was done regularly every alternate day during the month of August, 1994.

Small amounts of pollen from different parts of each pollen load were transferred to a slide and a temporary mount was made for microscopic study of the pollen contents. A few loads were later subjected to acetolysis (Erdtman, 1960). Identification of the pollen types was confirmed with the help of reference slides.

The study indicates that of the 200 pollen loads, 198 were unifloral with the pollen of *Cereus hexagonus* Mill. and 2 with *Eucalyptus* sp. pollen.

The pollen loads of *Cereus hexagonus* were found to be pale yellow in colour. The pollen of *Cereus hexagonus* are : Radially symmetrical, Amb spheroidal, 84.2-128.2  $\mu\text{m}$  (101.46  $\mu\text{m}$ ) in diameter, EV subprolate 80.6- 106.2(95.24  $\mu\text{m}$ ) x 69.6-91.6  $\mu\text{m}$  (79.48  $\mu\text{m}$ ); tricolpate, colpae 64.46  $\mu\text{m}$  long, streak like and almost reaching the poles, tips pointed, colpal margins broken, membrane granular; exine 3.3-5.0  $\mu\text{m}$  thick, punctitectate, tectum supported by very fine columella, spinulate, spinules supratecte and 1-2  $\mu\text{m}$  long (P1. 1, figs 1-6).

*Cereus hexagonus* of Cactaceae with tall, columnar, 6-ridged stem covered with clusters of sharp spines (areoles) is very frequently used for hedge making in the villages around Bapatla. The flowers produced during July-August are solitary, funnel-shaped, white and showy with numerous stamens and consistently opening nocturnally. The pollen productivity of this taxon determined with haemocytometer is 933 grains/anther. As there are numerous stamens in each flower, the number of pollen produced per flower runs into several thousands.

The present study highlights *Cereus hexagonus* as a major pollen supplier for *Apis cerana* bees. The honey bees repeatedly visit this plant for pollen only during dawn and very early morning hours. The on-

going melittopalynological studies of the Guntur District in our laboratory indicate that the month of August represents part of the dearth period for honey production. The honey bees utilize the pollen of *Cereus* for brood rearing and preparing the colony for the ensuing honey flow period commencing with the onset of winter season.

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#### REFERENCES

- Erdtman, G. 1960. The acetolysis method. a revised description. *Svensk.Bot.Tidskr.* 54: 561-564.

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#### Plate 1



1,2. *Cereus hexagonus* (AMB), x 700.  
3,4. *C. hexagonus* (EV), x 700.

5. *Cereus hexagonus* pollen in a unifloral pollen load, x 75.  
6. A part of the above enlarged, x 300.



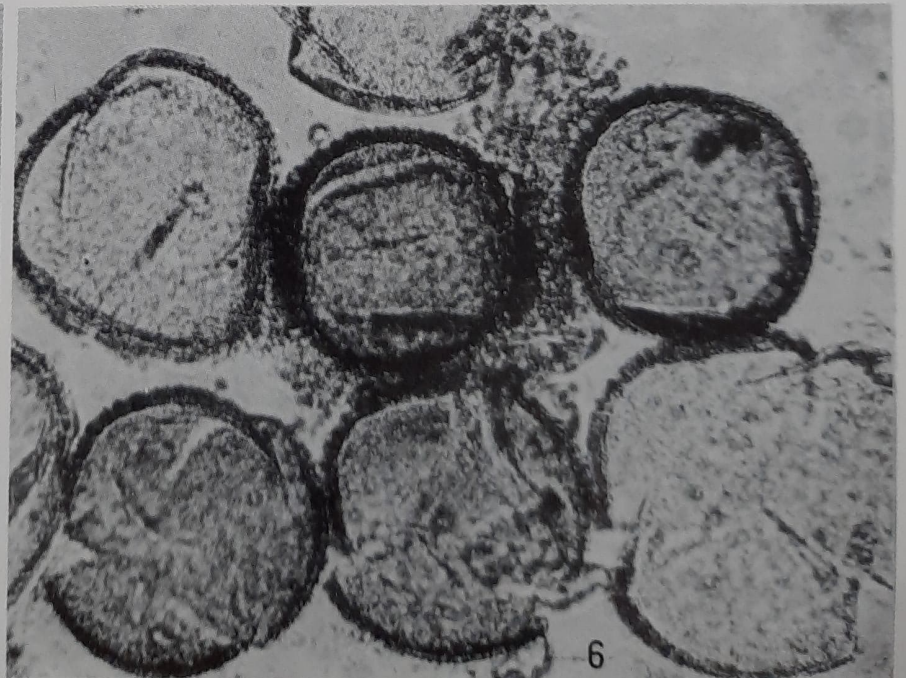
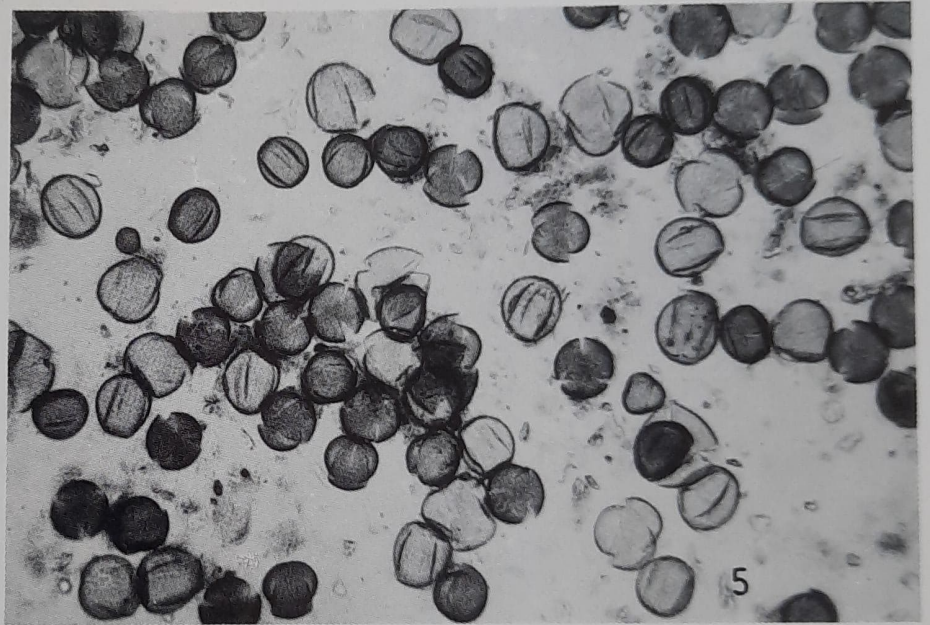
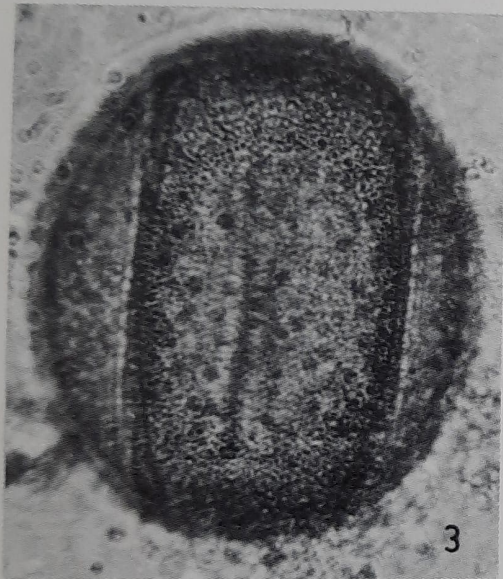
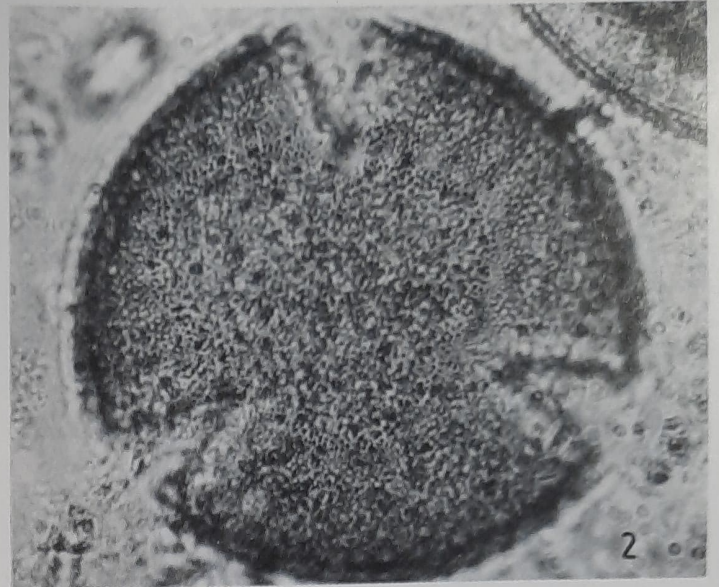
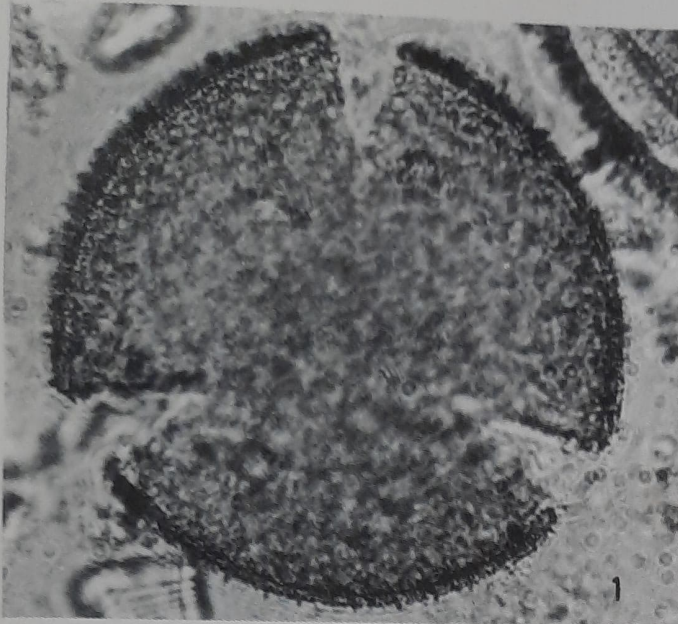


Plate 1