

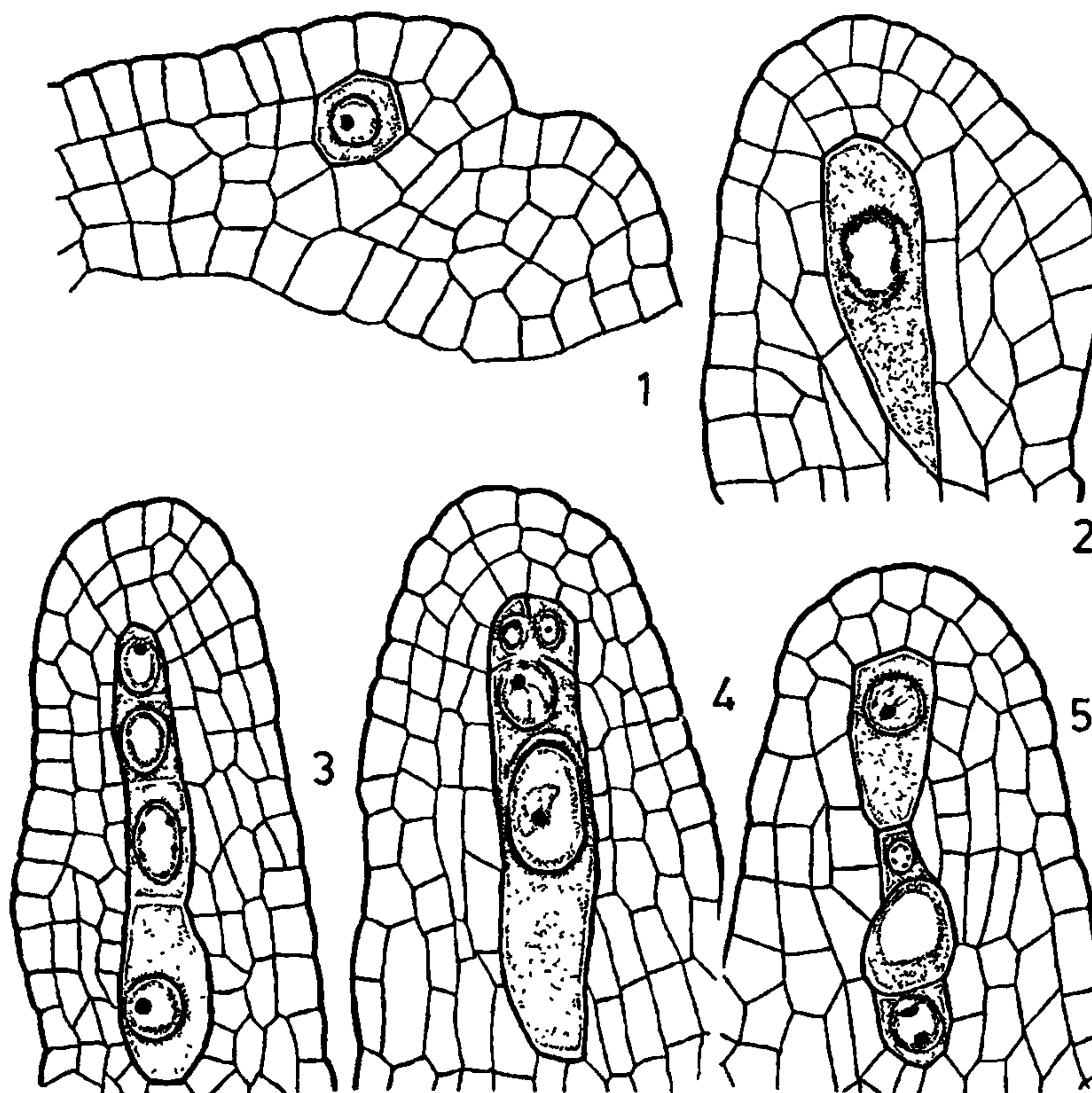
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## MEGASPOROGENESIS IN *COCOS NUCIFERA* L.—A REINVESTIGATION

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EXCEPT *Elaeis*<sup>1</sup> and *Cocos*<sup>2</sup>, which have been claimed to show tetrasporic *Adoxa* type of embryo sac development, the rest of the investigated Cocosoid palms<sup>3</sup> have monosporic *Polygonum* type of embryo sac. On reinvestigation<sup>4-5</sup>, *Elaeis guineensis* has revealed all types of megaspore tetrads and the *Polygonum* type of embryo sac. The present note communicates the results of reinvestigation of



Figures 1-5. *Cocos nucifera*. Longitudinal sections of developing ovules passing through the nucellus ( $\times 1000$ ).

megasporogenesis in *Cocos nucifera*.

The female flower buds in various stages of development were collected from local plantations and fixed in FAA after trimming the perianth segments. Customary processes of dehydration and microtomy were followed and sections (15–25  $\mu$ m thick) were stained with iron-haematoxylin and erythrocine.

The hypodermal archesporium is single-celled (figure 1). The mature megaspore mother cell is situated, two layers below the nucellar epidermis (figure 2). The megaspore tetrads are both linear (figure 3) and 'T' type (figure 4). Rarely, a parietal cell situated just above the megaspore tetrad enlarges to simulate the accessory megaspore mother cell (figure 5). Two megaspore mother cells in a single ovule are also rarely observed. The chalazal megaspore enlarges to develop in the *Polygonum* type of embryo sac. In all preparations examined only one embryo sac was found in an ovule.

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## INFLUENCE OF PRECOCENE II ON THE METAMORPHOSIS OF *CHILO PARTELLUS* SWINHOE

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THE economic significance of the jowar stem borer *Chilo partellus* has stimulated research into new methods of its control. The utilization of insect hormonal substances for the control of economically important pests is expected from the fear that the hormonal balance in insect metamorphosis is disturbed by externally applied hormonal substances. Because such compounds are usually effective against late larval and early pupal stages, they are not ideal for use against pest species in which the larval stages are responsible for crop damage or loss<sup>1</sup>.

Currently compounds that interfere with juvenile hormone biosynthesis or its action are receiving much attention as potential insect control agents to be used against Lepidopteran pests<sup>2</sup>.

We report here the effects of Precocene II on the metamorphosis of *C. partellus*.

*C. partellus* was reared on artificial diet<sup>3</sup> at a temperature of  $27 \pm 1^\circ\text{C}$  and RH  $65 \pm 5\%$ . Freshly ecdysed third and fourth instar larvae were treated topically on the abdominal region with 5 microlitres of different concentrations of Precocene II (0.25–1  $\mu\text{g}/\mu\text{l}$ ) in acetone. Forty larvae were treated each time and the experiments were replicated five times. Controls were treated with an equivalent volume of carrier solvent acetone. After the treatment, a suitable gap of time was given for the total absorption of Precocene and the larvae were transferred into the artificial diet. The treated larvae were observed daily to note the changes.

**Table 1** Effect of Precocene II on *Chilo partellus* (% of total in each stage at termination of experiment)

Third Instar larvae treatment $\mu\text{g}/\text{larva}$	Fourth instar larvae	Fifth instar larvae	Larval pupal inter- mediates	Normal pupae	Minia- ture pupae	Minia- ture adults
1.25	65	15	55	4	12	0
2.50	72.5	26	0	0	37	0
3.75	68	18	0	0	42	15
5.00	62	11	0	0	51	18

Normal adults were absent in all cases.