differentiating them biochemically from bacterial and animal cells.

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## Structure of *Acrocomia* Fruit

OF the palm kernels utilized as feeding materials, those of the coconut (*Cocos nucifera* L.) and palm nut (*Elaeis guineensis* L.) are best known. The differences in structure of the endosperm cells probably provide the most reliable means of distinguishing between the two species in meals or cakes. The endosperm cells of the coconut are more elongated than those of the palm nut and their walls are uniformly thickened, as opposed to the pitted walls of *Elaeis*[1].

Occasionally, commercial samples are obtained under the description of Paraguayan palm. The botanical name for this plant has been given as *Acrocomia totai*. This palm is an important oil plant in Paraguay[2] but no descriptions have been found of the histology of the fruit. Studies of the histology of fruits and seeds can be important in plant taxonomy and are also valuable in the identification of commercial plant products.

An investigation has been carried out into the histological structure of the commercial samples of Paraguayan palm with the view of establishing some

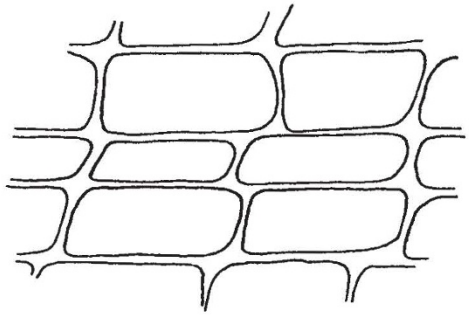

Fig. 1. Endosperm cells of *Acrocomia*. (× 200)

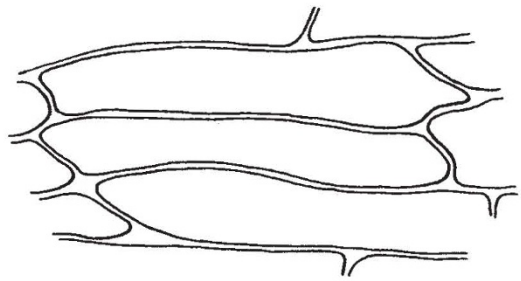

Fig. 2. Endosperm cells of *Cocos*. (× 200)

means of distinguishing between them and samples of coconut and palm nut. To augment this material, fruits of *Acrocomia sclerocarpa* Mart. have been obtained from Brazil. This species is very closely related to *totai*[2].

It has been found that, as in the case of *Cocos* and *Elaeis*, a consideration of the structure of the endosperm is most useful for the purposes of identification. Fig. 1 illustrates some typical endosperm cells of *Acrocomia* as they appear in a cleared preparation. The cells are brick-shaped, and their walls show no obvious pits. The absence of pits immediately distinguishes *Acrocomia* from *Elaeis*. In comparing the endosperm with that of *Cocos*, the shape of the cells provides the main distinguishing feature. Fig. 2 illustrates some typical *Cocos* endosperm cells. These cells are much more elongated than those of *Acrocomia*, a feature shown equally well in a longitudinal section of endosperm or a cleared preparation of a cake or meal.

It is intended to publish the details of this investigation elsewhere. I am indebted to Salamon and Seaber (consulting analytical chemists) for the supply of certain material used in this work.

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## Changes in Sex in the Hop caused by Plant Growth Substances

DURING an experiment to test the effects of certain systemic chemicals on the hop plant (*Humulus lupulus* L.) the production of male flowers by a genetically female plant was noticed. This behaviour may occur naturally in some varieties; but the phenomenon has not been reported in the variety Fuggles which was used in the present experiments. These were designed originally to determine whether treatment with low concentrations of certain systemic chemicals would lead to changes in the chemical composition of the plant. For this purpose plants were sprayed with aqueous solutions of a number of phenoxy and phenylthio acids which, although similar in structure to plant growth substances, were either inactive or only weakly active[1].

Three levels of treatment were given, the plants being sprayed to run-off with 500 p.p.m. solutions of each of the acids as their sodium salts either once, twice or three times, with intervals of several days between sprayings. When flower parts appeared it was observed that male flowers had only developed