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A PALM FRUIT FROM KAPURDI  
(JODHPUR, RAJASTHAN DESERT)  
*COCOS SAHNII* Sp. Nov.

DURING my survey work of Western Rajasthan, I investigated a collection of fossil impressions on Fuller's Earth taken out from the mines at Kapurdi, known for its early tertiary (Eocene) remains. One of the impressions came out to be *Cocos* species (see Photograph). The full description will be given elsewhere. I have named it after the late Prof. B. Sahnii. It is



FIG. 1. Remains of the endocarp of *Cocos sahnii* showing the two eye like depressions at one end.  $\times 1$ .

worthy of note that the fossil stem *Palmoxylon Sundaram Sahnii* from Sagaur (C.P.), was identified by me in 1938 as a *Cocos* stem and was accepted by Prof. Sahnii as such. This discovery of fruit confirms my view that *Cocos* was known in India in early tertiaries.

Herbarium, K. N. KAUL,  
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CYTOPLASMIC INHERITANCE IN  
*SACCHARUM*

THE theory of the "plastogene"<sup>1</sup> recognises the existence of determinants outside the nucleus

attached to the plastids having all the properties of nuclear genes including permanence. The existence of another set of extra nuclear determinants "plasmagene"<sup>2</sup> is vouched for by non-mendelian inheritance of which reciprocal differences are the simplest evidence. Breeding results in reciprocal hybrids in *Linum*,<sup>3,4</sup> *Nicotiana*<sup>5</sup> and *Zea*<sup>6</sup> have indicated that certain characters, especially male sterility, are determined at least in part by some condition of the cytoplasm.

Interspecific hybrids in *Saccharum* are not usually identical reciprocally. The species involved are *S. officinarum*, *S. spontaneum*, *S. barberi* and *S. robustum*. The gross appearance especially in respect of habit and thickness of stem, of reciprocal crosses, in some cases is so glaringly maternal that it sets one thinking if it could not be a case of cytoplasmic inheritance, at least in part in the sense that it could be a case of interaction between genes and cytoplasm. The problem is rendered more interesting in view of the fact that interspecific hybridization in *Saccharum* does not always involve the union of the haploid parental genomes. If inheritance was purely genic one would expect the hybrid to resemble that parent which had contributed the larger number of chromosomes. In some instances even though the male parent contributed the  $2n$  number, the resemblance of the hybrid is more to the maternal parent which contributed the usual haploid number. In some crosses the egg is known to contribute neither its haploid nor its diploid number. The various crosses and reciprocal crosses with their relevant chromosome numbers are given in brief in Table I. The general configuration of the hybrid appears to be influenced greatly by the cytoplasm of the egg parent. However, it is not suggested that this phenomenon is universal among all the varieties of *Saccharum* species. For instance, while it is marked when the varieties like Chittan and striped Mauritius are used, it is not so pronounced when others like Kaludai Boothan or Black Cheribon are involved. It may well be that this phenomenon of cytoplasmic inheritance is confined only to some varieties.

Support to the view of the existence of cytoplasmic inheritance is to be found in the manifestation of maternal inheritance with regard to the phenomenon of male sterility. Dutt and Krishnaswami<sup>7</sup> and Dutt and Rao<sup>8</sup> have recorded this phenomenon in some *spontaneum* hybrids. An analysis of the available hybrids suggested that this phenomenon revealed itself only when *S. spontaneum* was involved in the