ethanol containing lanthanum nitrate, and were easily picked up from the surface.

The technique for cutting ultrathin sections described here is being developed and further details will be published soon.

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A New Specimen of *Nipa* Fruit from Mohgaonkalan Cherts

THE fruit *Nipa hindi* (Rode) Sahni was collected by Prof. K. P. Rode from Intertrappean beds of Mohgaonkalan, Chhindwara District, in 1933. So far it has been a holotype of *Nipa* from Deccan Intertrappeans of India.

A fresh specimen has been collected by me recently from the same locality. It differs from *Nipa hindi* (Rode) Sahni in size, shape, structure of internal seed, and the characters of the endocarp. However, the importance of the discovery of a new specimen is undoubtedly unique. Presence of *Nipa* fruit is very characteristic of the Eocene period; younger records are not yet known. Accordingly, on the discovery of Rode's only specimen of *Nipa hindi*, Prof. Sahni¹ had suggested an Eocene age for Intertrappeans at Mohgaonkalan. This new specimen falls in line and brings more support to Prof. Sahni's view on the age of the Deccan Traps of India. Hislop too had recorded this fruit in Deccan cherts in the publications by Carter², Hislop³, and Hislop and Hunter⁴; but unfortunately his specimens are untraceable. Almost all the known records of *Nipa* show its existence roughly along the shore of the Nummulitic sea (Tethys), as indicated by Reid and Chandler⁵, which probably extended from about north of Chhindwara.

Fig. 1. *Nipa* fruit from Mohgaonkalan cherts. $\times 0.6$

Fig. 1 shows a complete fossil fruit comparable to modern *Nipa fruticans*. The fruit is a single-seeded drupe, slightly flattened, obovoid, with six longitudinal ridges which meet at the apical distinct umbo. It measures 6.5 cm. in length and 5 cm. in breadth at its broadest distal part. The carpel wall is thick especially at the apex. The epicarp is thin and smooth, the sarcocarp is about 10 mm. thick, and the endocarp is about 0.8 mm. thick. The single seed inside is slightly flattened, and has a prominent sulcus with endocarpic ridge dipping into it. The sulcus with the endocarpic ridge extends from the base to the top of the seed.

Preservation of the material is satisfactory and structural details are under further investigation.

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Variation in *Phytophthora palmivora* (Butl.) Butl. on *Theobroma cacao* L. in West Africa

DISEASES of *Theobroma cacao* L., particularly pod-rot, caused by *Phytophthora palmivora* (Butl.) Butl., have been described in all the cocoa-producing areas of West Africa. A large collection of isolates from most territories, however, has shown that the nature of the pathogen varies greatly in the region and that at least two types of the fungus exist.

The first type of isolate, referred to as the Ghanaian type, is the dominant fungal pathogen in the more westerly cocoa-growing countries of Ghana, Ivory Coast, and Sierra Leone. This type occurs occasionally in Nigeria, Southern Cameroons, Gabon and the Belgian Congo. The isolates are characterized by cultural and morphological features typical of *P. palmivora*, and also have rapid growth-rates when inoculated into healthy pods. Minor differences have been found between isolates within the group, but for the most part they are indistinguishable.

The isolates of the second, or Nigerian, group, which are the dominant pathogens in the more easterly countries of Nigeria, Southern Cameroons, Fernando Po, French Cameroons and probably Gabon, show marked differences from the Ghanaian type. Cultural and morphological characters are very dissimilar, especially in growth-rates on artificial media and in sporangial dimensions, and the rate of lesion development in pods is both appreciably slower and very variable. Current tests have shown that complementary strains for oospore production occur within the group. Mixed cultures of the two groups of isolates grown on oatmeal agar at 60° F. have been found to produce oospores. Dimensions of these spores corresponded to those described by Ashby¹ on growing cultures of the 'cocoa' and 'rubber' groups of the fungus together under similar conditions. No oospore production has been obtained by cross in any isolates from the westerly group of countries.