

ECHINODIA THEOBROMAE, Pat.*(Translated from the French.)*

This fungus was collected in the Botanical Gardens at Singapore by Professor Baker on dead branches of *Theobroma Cacao*—the Cocoa tree (No. 5410).

It has the appearance of a small cushion, convex, orbicular, about two centimetres in diameter, eight millimetres thick in the centre, with thin margins applied to the surface towards the base but free and a trifle raised forward, creamy white, bristling with little stilbiform points which are cream coloured or reddish and are scattered regularly over the whole surface.

The body in general of the little cushion or stroma is in consistence coriaceous to corky, and its colour within is a pale ochre increasing in intensity towards the point of attachment. It is made up of tough slender hyphae (4-6 microm.) with thick walls and few septa with the buckles little marked, interlaced into a fairly lax pseudo-tissue, which can be compressed, with angular mesh of 20-30 microm. diameter.

The points which cover the whole surface of the plant are evenly cylindric, slightly enlarged clavately upwards, obtuse at the top, sometimes enlarged at the base, ordinarily simple though rarely provided with one or two lateral outgrowths. They are independent of each other or else united in pairs or threes; their height is about one millimetre, and their thickness as they emerge from the stroma 200-300 microm. The thin marginal part appears fimbriated by quite a series of these points.

Each point taken by itself possesses the constitution of a *Stilbum*, that is to say it consists of an axis of thin filaments very compact, which taking origin at the place where the fungus is affixed upon its support runs right through the stroma, and ends beyond in a little free column covered with fructifications.

The colour of this axis is reddish ochre, and to follow it through the paler general mass is easy.

The hyphae of the periphery of each "*Stilbum*" diverge towards the exterior and end each in a wreath of conidia.

These are colourless, smooth, ovoid, narrowed to both ends, straight or a little curved at the base, measuring $9-12 \times 4-6$ microm.

The method of the development of these conidia is very peculiar. The oldest is the lowest. That which follows it appears not at the extremity of it, but near to its summit a little to one side; the third is mounted upon the side of the second and so on with all that follow giving rise to a sympodial wreath of 6 to 10 conidia.

The hyphae themselves of the axis of the "*Stilbum*" measuring 3 to 5 microm. are septate here and there, and each of their joints arises from that which has gone before on the side near the apex.

As yet we do not know the perfect form of this fungus, but if we take into consideration the general appearance of the plant,—its consistency, the presence of buckles in the filaments,—the supposition that it is derived from a Polypore near to *Coriolus* has nothing improbable in it.

This genus *Echinodia* could be characterised by saying that it is a compound *Stilbum* in which the conidia are produced sympodially.

M. N. PATOUILLARD IN THE BULLETIN DE LA SOCIÉTÉ
MYCOLOGIQUE DE FRANCE, XXXIV, 2ND FASCICLE.

LIGHTNING AND HEVEA.

Dr. A. A. L. Rutgers in the *Archief voor de Rubbercultuur in Nederlandsch-Indie*, III., 1919, No. 4, p. 163, ascribes certain cases of bleeding of rubber trees to lightning. His article contains beautiful clear figures illustrating the cases.

Similar damage to a group of trees was observed a few years ago by Mr. F. G. Millar on the Tangga Batu Estate, Malacca, and mycologically examined for me by Professor C. F. Baker, and Mr. R. M. Richards who found no fungal cause. The damage had been done two years before the bleeding began to be noticed; and the bleeding was found to result from the stretching and slight rupturing of the bark by reason of the growth of the wood being excessive over the callus and included rubber of small old wounds. Dr. Rutgers remarks that in certain spots trees may suffer from more than one storm: and if the explanation is correct, as it well may be, one of the damaged trees on the Tangga Batu Estate had been peppered by lightning discharge twice.

I. H. BURKILL.

THE COMPOSITION OF A PIECE OF WELL- DRAINED SINGAPORE SECONDARY JUNGLE THIRTY YEARS OLD.

This little study of secondary jungle is a mite only towards the comprehension of the great complex "rain forest" of Malaya. It is an attempt to make use of the clearing of a small area, with a more or less known history, where nature had been for thirty years at her work of reconstruction. Many hundreds of such studies are needed, and the interest in them will grow as the problems to be solved become more and more apparent upon comparison of results. At present such comparison is impossible: for this study is but a beginning.

The study was undertaken in December last in the following way. The area to be cleared was in all about two acres, but to sort and determine all the plants over it was impossible: this being