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Calathea lutea (Marantaceae), a Potential Domesticated and Source of High-Grade Wax

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were found to be identical with those previously described for *trans* polyisoprene (3, 5, 6).

The average molecular weight measured by gel permeation chromatography was 5.3×10^5 and a polydispersity index of 1.3 was calculated. The polymer has a melting point of 40°C and its density was 0.94 g per liter.

The surprisingly high gutta content of *H. excelsa* is comparable to the rubber content of *Parthenium argentatum* (guayule) and is higher than the gutta content of other plants (1, 5); thus this plant may be regarded as a practical source of gutta. We are currently concerned with experiments to find out the distribution of gutta in the different parts of the plant. If more members of the Hippocrateaceae are studied to determine the presence of this polymer in such amounts it could prove to be of chemotaxonomic significance.

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***Calathea lutea* (Marantaceae), a Potential Domesticated and Source of High-grade Wax.**—Because of chemical difficulties in their synthesis, all true waxes are extracted from plants—and from wild plants. The number of species supplying the world's waxes is very small.

The most valuable wax comes from *Copernicia cerifera*, a palm growing in the driest regions of northeastern Brazil, source of carnaúba wax.

A member of the Marantaceae or Arrowroot family, *Calathea lutea* (Aubl.) G.F.W. Meyer, yields a wax known in the Amazon as cauassú. It has chemical and physical characteristics very similar to those of the costly carnaúba wax (1, 2). Hardly exploited, it is a plant long overdue for domestication.

Calathea lutea, a large herb sometimes obtaining a height of 15 ft, grows wild in semi-inundated or well-drained upland sites in tropical regions of Central America and northern South America. It is particularly abundant in dense stands along Amazonian rivers, where it is one of the first plants to take over disturbed or cleared areas. It can be reproduced easily by seeds or vegetatively by planting pieces of the rhizome; and it can be set out in land that is not of much agricultural use for most other crops.

The plant is admirably suited for a cottage industry in isolated regions. Even the wild stands could be exploited as they occur in many areas where they are abundant and are accessible. The leaves are easily harvested and transported readily in canoes. Furthermore, the wax can be removed without machinery by boiling or with solvents, although technical studies may make removal even easier.

The under surface of the leaves—the basal ones sometimes reaching a length of 4 ft—is pruinose with a powdery white or greyish “bloom,” the wax.

It has been estimated that, if planted at about 33,500 per acre, *C. lutea* might give an annual yield of ca. 36 pounds of crude wax per acre; the first year there would be one harvest of leaves; and two harvests in subsequent years.

There are sundry other wax-yielding plants in the Marantaceae (*Monotagma* and *Ischnosiphon*) that should be investigated, but they are not such large plants and are of a more restricted distribution.

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