

AD A108860

ENC FILE COPY

LEVEL

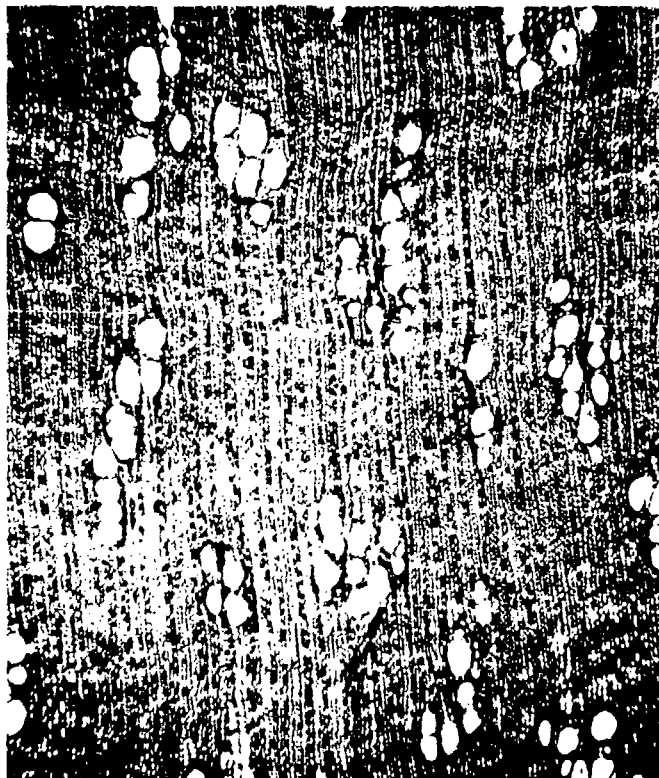
12

WOOD ANATOMY
OF THE
NEOTROPICAL SAPOTACEAE
XXI. BARYLUCUMA

RESEARCH PAPER FPL 372

FOREST PRODUCTS LABORATORY
FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE
MADISON, WIS.

MAY 1981



DTIC
ELECTE
DEC 28 1981
H

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

81 12 23 006

Abstract

Barylucuma decussata, the sole member of the genus, was established in 1925 by Adolpho Ducke. Eyma (1936) suggested its affinity with Pouteria and Baehni (1942) made the new combination Bouteria decussata (Ducke) Baehni. Ducke (1942) revised his opinion regarding the status of his new genus indicating that it was untenable but did not suggest its placement in one of the known genera. Aubréville (1961) retained Barylucuma as distinct. Anatomically and physically the wood of Barylucuma is similar to certain species of Necxythece, Paralabatia and Myrtiluma, but seems to be most closely allied with Podoluma.

Preface

The Sapotaceae form an important part of the ecosystem in the neotropics; for example, limited inventories made in the Amazon Basin indicate that this family makes up about 25 percent of the standing timber volume there. This would represent an astronomical volume of timber but at present only a very small fraction is being utilized. Obviously, better information would help utilization--especially if that information can result in clear identification of species.

The Sapotaceae represent a well-marked and natural family but the homogeneous nature of their floral characters makes generic identification extremely difficult. This in turn is responsible for the extensive synonymy. Unfortunately, species continue to be named on the basis of flowering or fruiting material alone and this continues to add to the already confused state of affairs.

This paper on Barylucuma is the twenty-first in a series describing the anatomy of the secondary xylem of the neotropical Sapotaceae. The earlier papers, all by the same author and under the same general heading, include:

- | | |
|--|---------------------------------------|
| I. Bumelia--Res. Pap. FPL 325 | XI. Prieurella--Res. Pap. FPL 352 |
| II. Mastichodendron--Res. Pap. FPL 326 | XII. Neoxythece--Res. Pap. FPL 353 |
| III. Dipholis--Res. Pap. FPL 327 | XIII. Podoluma--Res. Pap. FPL 354 |
| IV. Achrouteria--Res. Pap. FPL 328 | XIV. Elaeoluma--Res. Pap. FPL 358 |
| V. Calocarpum--Res. Pap. FPL 329 | XV. Sandwithiodoxa--Res. Pap. FPL 359 |
| VI. Chloroluma--Res. Pap. FPL 330 | XVI. Paralabatia--Res. Pap. FPL 360 |
| VII. Chrysophyllum--Res. Pap. FPL 331 | XVII. Gambeya--Res. Pap. FPL 361 |
| VIII. Diploon--Res. Pap. FPL 349 | XVIII. Gomphiluma--Res. Pap. FPL 362 |
| IX. Pseudoxythece--Res. Pap. FPL 350 | XIX. Chromolucuma--Res. Pap. FPL 363 |
| X. Micropholis--Res. Pap. FPL 351 | XX. Manilkara--Res. Pap. FPL 371 |

Publication in this manner will afford interested anatomists and taxonomists the time to make known their opinions and all such information is hereby solicited. At the termination of this series, the data will be assembled into a single comprehensive unit.

WOOD ANATOMY OF THE NEOTROPICAL SAPOTACEAE

XXI. BARYLUCUMA

By

B. F. Kukachka, Botanist^{1/}

Forest Products Laboratory,^{2/} Forest Service
U.S. Department of Agriculture

Introduction

Barylucuma was described in 1925 with a single species, B. decussata Ducke from the State of Para, Brazil. In 1936 Eyma (4)^{3/} stated that it appears to be related to the Oxythece group: "Its leaves are almost the same and their decussate position is by no means a very fundamental difference, as also in the Oxythece group the leaves are often more or less opposite, though never so, as in Barylucuma. The fruit of Barylucuma is still unknown but the other characters are favorable to its inclusion in Pouteria." Ducke (3) writes later in 1942, "We conclude that opposite leaves and sweet bark are not such valuable generic characters as I previously believed. Consequently, Glycoxylon (and also the two other genera, namely, Barylucuma and Syzygiopsis) cannot be maintained. The problem of placing these plants in good genera still remains unsolved." Baehni (2) submerged Barylucuma in his ponderous genus, Pouteria making the new combination Pouteria decussata (Ducke) Baehni. Aubréville (1) reinstated Barylucuma decussata Ducke as a distinct monotypic entity.

Anatomically and physically Barylucuma is not a Pouteria, but there appears to be some affinity with Neoxythece, Paralabatia, and Myrtiluma. Anatomically it is most closely allied with Podoluma.

Description

This description of Barylucuma is based upon the only extant wood specimen of the genus, collected by N. T. Silva (No. 3176) in the State of Para, Brazil. The corresponding herbarium specimen, No. 135031, is housed in the herbarium of Empresa Brasileira de Pesquisas Agropecuarias (formerly IAN) in Belem, Brazil. The wood is a drab brown with a specific gravity of 1.00 plus.

1/ Pioneer Research Unit, Forest Products Laboratory.

2/ Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

3/ Underlined numbers in parentheses refer to literature cited at the end of this report.

Anatomical:

Pores in clustered, radial-echelon arrangement (fig. 1). Solitary pores are present but occur most commonly in radial multiples of 2 to 4 (5). Maximum tangential diameter observed was 142 μm .

Axial parenchyma banded, the individual bands commonly and irregularly 1 to 3 seriate and less frequently 4 to 5 seriate. Most cells apparently free of contents but occasionally with yellow-brown contents which may or may not be associated with silica.

Wood rays 1 to 3 seriate, heterocellular; the marginal cells most commonly square. The maximum body height of the 2 to 3 seriate portion was 394 μm . Lateral walls of marginal cells uniformly small pitted and inconspicuous. Vessel-ray pitting irregular in shape and size. Silica common in the wood rays and confined to cells containing yellow-brown contents. The silica particles are generally spheroidal in shape and attain diameters of 20 μm . Silica content of the wood based on chemical analysis was 0.41 percent of the oven-dry weight of the wood.

Wood fibers very thick-walled; the fiber length average was 1.30 mm. Vascular tracheids common.

Diagnostic features: Wood drab brown; very heavy (wood sinks readily in water). Pores in clustered, radial-echelon arrangement; parenchyma banded. Silica present in the wood rays and always associated with or embedded in yellowish-brown organic contents. Vascular tracheids common. Generally similar to Podoluma but lacking microcrystals in the axial parenchyma that are characteristic of the latter wood.

Literature Cited

1. Aubréville, A.
1961. Notes sur des Poutériées Américaines. *Adansonia* 1:2:174.
2. Baehni, Charles.
1942. Mémoires sur les Sapotacées. II. Le Genre Pouteria.
Candollea IX:349.
3. Ducke, Adolpho.
1942. New and noteworthy Sapotaceae of Brazilian Amazonia.
Trop. Woods 71:8.
4. Eyma, P. J.
1936. Notes on Guiana Sapotaceae. *Rec. Trav. Bot. Neerl.* 33:167.

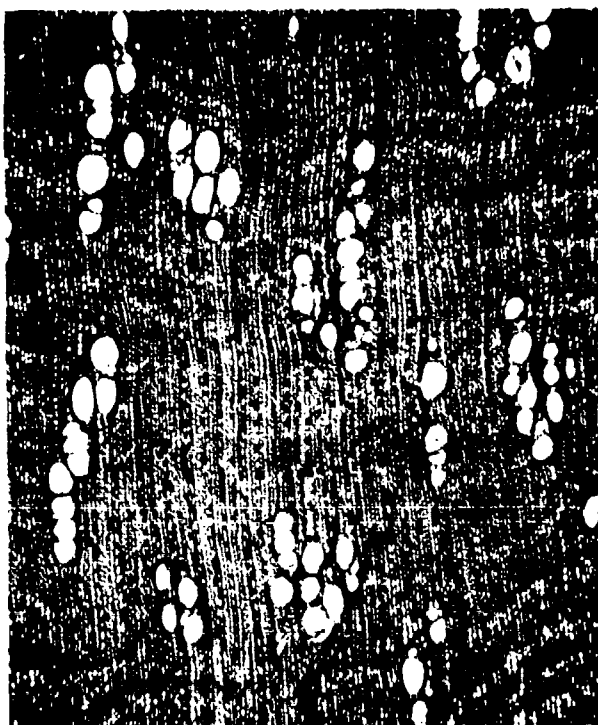


Figure 1.--*Barylucuma decussata*
illustrating pore and parenchyma
arrangement (N.T. 3176) X 30.

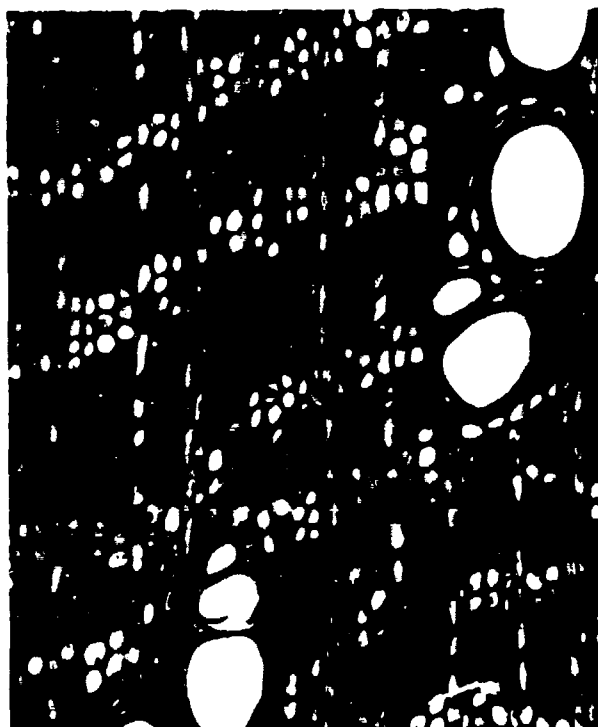


Figure 2.--Same as figure 1,
showing parenchyma detail
X 110.

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	<i>Per [signature]</i>
<i>on file</i>	
By _____	
Distribution/	
Availability Codes	
Aval and/or	
Dist Special	
<i>A</i>	

U. S. Forest Products Laboratory

Wood anatomy of the neotropical Sapotaceae: XXI.

Barylucuma, by B. F. Kukachka, FPL.

4 p. (USDA For. Serv. Res. Pap. FPL 372).

This description of Barylucuma is based upon the only extant wood specimen of the genus, collected by N. T. Silva (No. 3176 in the State of Para, Brazil. The corresponding herbarium specimen (No. 135031) is housed in the herbarium Empresa Brasileira de Pesquisas Agroperuaria (formerly IAN) in Belem, Brazil. The wood is a drab brown with a specific gravity of 1.00 plus.
