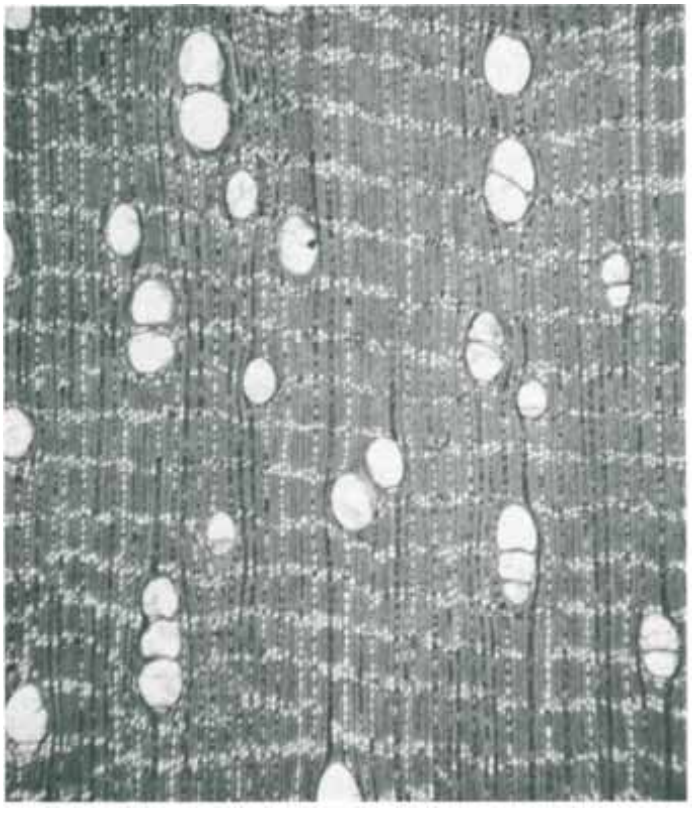
WOOD ANATOMY OF THE NEOTROPICAL SAPOTACEAE

XIX. CHROMOLUCUMA

RESEARCH PAPER FPL 363

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

1980



Abstract

Chromolucuma was established by Adolpho Ducke in 1925 based on the single species rubriflora native to the middle Amazon of Brazil. A second species, baehniana, was described in 1949 by Monachino. It occurs in the Amazon and Guyana. A third species, sericea, was named by Gilly but it is not known at the present time whether this was validly published. Anatomically the affinities of Chromolucuma appear to be with Pouteria (sensu Aubréville) but it differs from the latter in several respects.

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 synonomy. 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 Chromolucuma is the nineteenth 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	X.	Micropholis--Res. Pap. FPL 351
II.	Mastichodendron--Res. Pap. FPL 326	XI.	Prieurella--Res. Pap. FPL 352
III.	Dipholis--Res. Pap. FPL 327	XII.	Neoxythece--Res. Pap. FPL 353
IV.	Achrouteria--Res. Pap. FPL 328	XIII.	Pololuma--Res. Pap. FPL 354
V.	Calocarpum--Res. Pap. FPL 329	XIV.	Elaeoluma--Res. Pap. FPL 358
VI.	Chloroluma--Res. Pap. FPL 330	xv.	Sandwithiodoxa--Res. Pap. FPL 359
VII.	Chysophyllum--Res. Pap. FPL 331	XVI.	Paralabatia--Res. Pap. FPL 360
VIII.	Diploon--Res. Pap. FPL 349	XVII.	Gambeya--Res. Pap. FPL 361
IX.	Pseudoxythece--Res. Pap. FPL 350	XVIII.	Gomphiluma--Res. Pap. FPL 362

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

XIX. CHROMOLUCUMA

By

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Introduction

Ducke described the genus Chromolucuma with its single species rubriflora in 1925. This was subsequently accepted by Aubréville (1)[3/] and Cronquist (3) but Baehni (2) in 1942 reduced it to a section of his all-inclusive genus Pouteria producing the combination Pouteria rubriflora (Ducke) Baehni. Apparently the merits of this species were recognized by Baehni because it became the sole member of Section 8. Chromolucuma.

Ducke (4) describes Chromolucuma rubriflora "as one of the prettiest Sapotaceae of the Amazon. The large stipules, rather persistent on sterile branches, and the dry spongy mesocarp of the ripe fruit are very characteristic of this tree, which is also remarkable for its large leaves and bright red flowers." According to Ducke the range of Chromolucuma is middle Amazonian occurring between Santarem and the Rio Negro.

Chromolucuma baehniana Monachino is known from Amazonas and Guyana. It is not known whether the Amazonian C. sericea Gilly has been published.

Record (5) provided a rather brief description of Chromolucuma which was based on a single specimen (Ducke wood No. 12) and lacked several essential details.

Description

This description is based on three specimens of rubriflora (Ducke 12, Froes 370 and 578) and one specimen of sericea (Froes 407).

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.

General: Heartwood light brown with a reddish tint; not sharply differentiated from the sapwood. Wood heavy with an average specific gravity of 0.92, the individual specimens ranging from 0.84 to 1.04. Growth rings not apparent.

Anatomical:

Pores essentially diffuse; solitary and in radial multiples of 2 to 3. Maximum pore diameter of individual specimens ranges from 173 µm to 236 µm in rubriflora, 102 µm in the single specimen of sericea (figs. 1 and 3).

Vessel member length averages 760 µm in rubriflora and 900 µm in sericea. Inter-vessel pit diameters 8 to 10 (12) µm. Perforations simple. Tyloses thin-walled to thick-walled and sclerotic.

Axial parenchyma banded; the individual bands irregularly 1 to 3 seriate. Parenchyma cells larger and more prominent in rubriflora (figs. 2 and 4). Cells with colored contents common. Silica present and then found only in those cells with other contents.

Wood rays essentially uniseriate; biseriate rays of local occurrence and then the biseriate portion 1 to 5 cells in height: heterocellular. Vessel-ray pitting irregular in shape and size. Silica common in the ray cells and confined only to those cells with other contents. The silica particles spheroidal to irregular, attaining diameters of 20 to 25 µm.

Wood fibers very thick-walled; fiber length averages for the different specimens range from 1.47 mm to 1.63 mm with an overall average of 1.52 mm. Vascular tracheids common.

Silica content: A value of 1.77 percent was determined for a mature specimen of rubriflora (Ducke 12) and 0.64 and 0.70 percent for immature specimens of this species (Froes 370 and 578). C. sericea produced a value of 0.10 percent.

Diagnostic features: Rather similar to Pouteria (sensu Aubréville) species with intervessel pits in the 8 to 10 µm range; in the latter the heartwood is appreciably darker and distinct from the sapwood and the wood rays are commonly 1 to 2 seriate with a high biseriate body portion. Chromolucuma sericea is quite distinctive among the neotropical Sapotaceae by reason of its small and rather widely dispersed pores.

Figure 1. --Chromolucuma rubriflora, pore and parenchyma arrangement (Ducke 12) X 30.

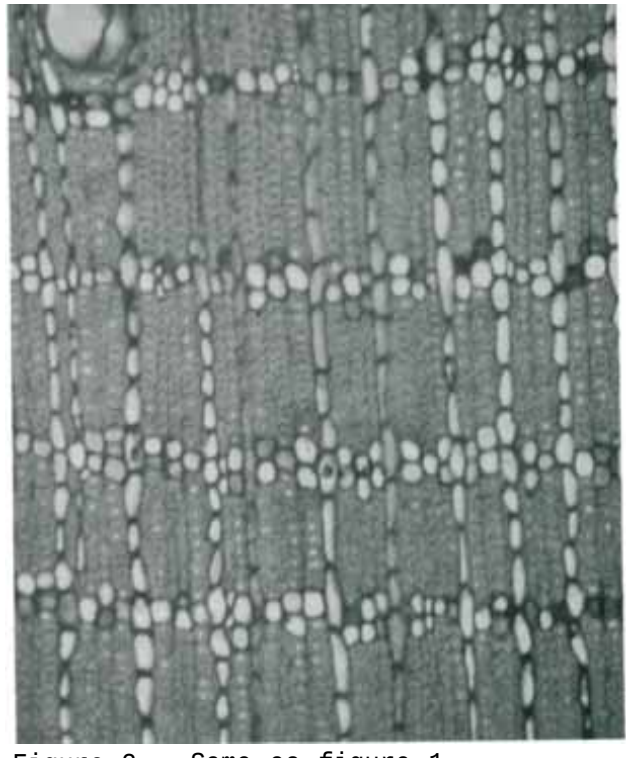

Figure 2. --Same as figure 1, parenchyma detail X 110.

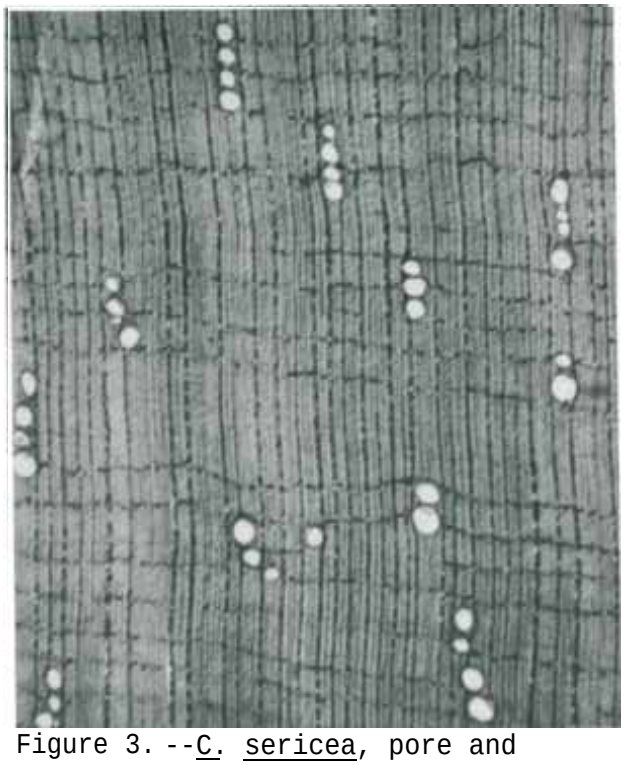

Figure 3. --C. sericea, pore and parenchyma arrangement (Froes 407) x 30.

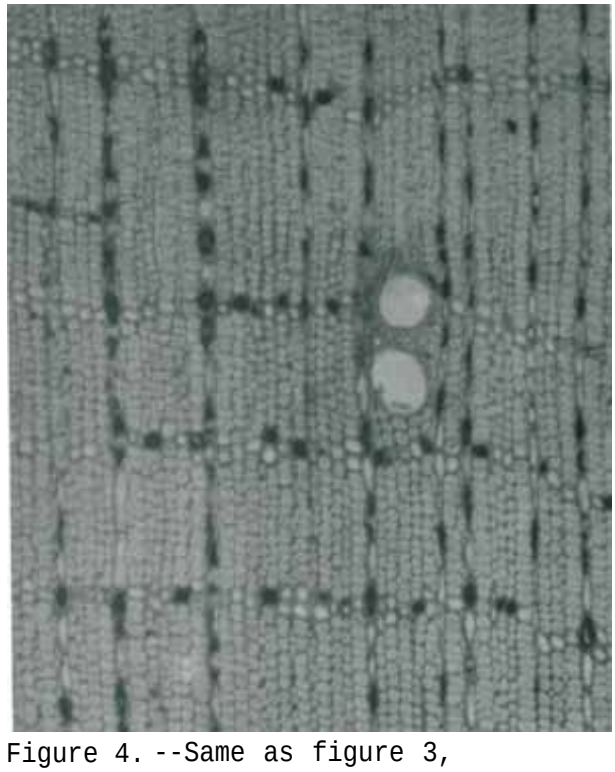

Figure 4. --Same as figure 3, parenchyma detail X 110.

Literature Cited

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U.S. Government Printing Office: 1980 – 654-013


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