

**LEVEL II**

**Wood Anatomy  
of the  
Neotropical Sapotaceae.  
VIII. Diploon.**

(12)



Department of Agriculture  
Forest Service  
Forest Products Laboratory  
Research Paper FPL 349

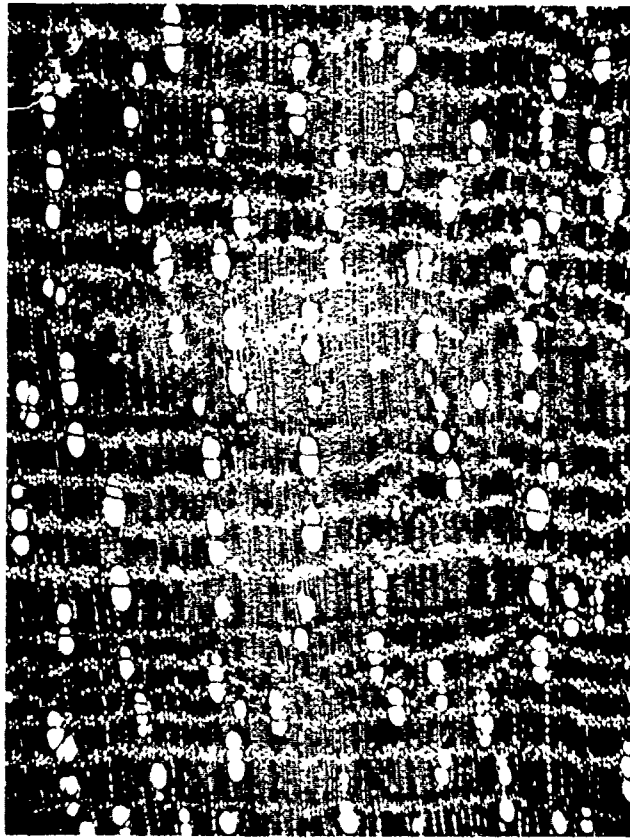
Forest Service

FPL-349

1979

DOC FILE COPY

ADA 080865



1979  
Kukaka

DTIC  
ELECTE  
FEB 21 1980  
A

DISTRIBUTION STATEMENT A  
Approved for public release;  
Distribution Unlimited

87 2 9 161

24700

958

## Abstract

The genus *Diploon* is represented here by *D. cuspidatum* (Hoehne) Cronquist which is native to southeastern Brazil. Originally described as *Chrysophyllum cuspidatum* by Hoehne in 1933, it was raised to generic status by Cronquist in 1946. The anatomy of the secondary xylem substantiates this transfer. A second species, *D. venezuelana* Aubreville from Venezuela, was not available for this study.

## 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 *Diploon* is the eighth 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*--Research Paper FPL 325
- II. *Mastichodendron*--Research Paper FPL 326
- III. *Dipholis*--Research Paper FPL 327
- IV. *Achrouteria*--Research Paper FPL 328
- V. *Calocarpum*--Research Paper FPL 329
- VI. *Chloroluma*--Research Paper FPL 330
- VII. *Chrysophyllum*--Research Paper FPL 331

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

VIII. DIPLOON

By

B. F. Kukachka, Botanist<sup>1/</sup>

Forest Products Laboratory,<sup>2/</sup> Forest Service  
U.S. Department of Agriculture

---

Introduction

In his studies of the South American species of Chrysophyllum, Cronquist had examined C. cuspidatum Hoehne but excluded this species from consideration and indicated that it was an undescribed new genus. His reasons for exclusion were based primarily on the following features: an ovary which was unilocular by failure of the partition and the combination of estaminoidal flowers; a small, basilateral seed scar; the absence of endosperm. The new genus Diploon was subsequently described (3) and the new combination, Diploon cuspidatum (Hoehne) Cronquist was established. Formerly a monotypic genus limited to southeastern Brazil, a second species, Diploon venezuelana, has been described by Aubreville from Bolivar Department of Venezuela. Unfortunately, the wood of this second species was not available for study.

The present anatomical study upholds the exclusion of cuspidatum from Chrysophyllum and also the establishment of the new genus Diploon.

Description

Based on a single stem 6 cm. in diameter taken from tree 121 in the Jardim Botânico, Sao Paulo, Brazil. Herbarium material F. C. Hoehne 28358. SJRw 23810.

---

<sup>1/</sup> Pioneer Research Unit, Forest Products Laboratory.

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

General: Wood light brown; without luster. No distinction between heartwood and sapwood. Growth rings indistinct or lacking. Wood fine-textured and heavy (specific gravity 0.90).

Anatomical: Compare with Chrysophyllum (4).

Pores with distinct tendency toward radial alignment (fig. 1); commonly in radial multiples of 2-3(4). Maximum tangential diameter of 110 $\mu$ m was observed.

Vessel-member length averages 740  $\mu$ m; intervessel pit-pair diameter of 6  $\mu$ m. Tyloses not observed; perforations simple.

Axial parenchyma more or less regularly banded; the individual bands irregularly (1)2-3 seriate (fig. 2). The cells generally free of contents but a few cells with brown contents in which is embedded a single, spheroidal particle of silica. Rhombic crystals and microcrystals not observed.

Wood rays 1-2 seriate; heterocellular with vertical fusions. The maximum body height of the biseriate portion up to 346  $\mu$ m, but most commonly the biseriate portion is less than 10 cells in height. Vessel-ray pitting irregular in shape and size to linear. Silica common in the wood rays and confined to cells with brown contents. The silica particles are commonly spheroidal or sometimes irregular (clinker); mostly 16 to 20  $\mu$ m in diameter to 25  $\mu$ m in the clinker type. Rhombic crystals and microcrystals not observed. A silica content of 0.64 percent was determined by chemical analysis.

Wood fibers thick-walled with an average length of 1.46 mm. Vascular tracheids not observed in macerated material.

Diagnostic features: Wood light brown. Pores in radial alignment. Parenchym prominent because of its light color and banding. Silica particles only in cells with other contents. Rhombic and microcrystals lacking.

U.S. Forest Products Laboratory.

Wood anatomy of neotropical Sapotaceae:  
VIII. Diploon, by B. F. Kukachka. Res. Pap.  
FPL 349, FPL, For. Serv., USDA. 5 p.  
Madison, Wis.

The genus Diploon is represented here by  
D. cuspidatum (Hoehne) Cronquist, native to  
southeastern Brazil. It was raised to generic  
status by Cronquist in 1946, a transfer sub-  
stantiated by the anatomy of the secondary  
xylem.

U.S. Forest Products Laboratory.

Wood anatomy of neotropical Sapotaceae:  
VIII. Diploon, by B. F. Kukachka. Res. Pap.  
FPL 349, FPL, For. Serv., USDA. 5 p.  
Madison, Wis.

The genus Diploon is represented here by  
D. cuspidatum (Hoehne) Cronquist, native to  
southeastern Brazil. It was raised to generic  
status by Cronquist in 1946, a transfer sub-  
stantiated by the anatomy of the secondary  
xylem.

U.S. Forest Products Laboratory.

Wood anatomy of neotropical Sapotaceae:  
VIII. Diploon, by B. F. Kukachka. Res. Pap.  
FPL 349, FPL, For. Serv., USDA. 5 p.  
Madison, Wis.

The genus Diploon is represented here by  
D. cuspidatum (Hoehne) Cronquist, native to  
southeastern Brazil. It was raised to generic  
status by Cronquist in 1946, a transfer sub-  
stantiated by the anatomy of the secondary  
xylem.

U.S. Forest Products Laboratory.

Wood anatomy of neotropical Sapotaceae:  
VIII. Diploon, by B. F. Kukachka. Res. Pap.  
FPL 349, FPL, For. Serv., USDA. 5 p.  
Madison, Wis.

The genus Diploon is represented here by  
D. cuspidatum (Hoehne) Cronquist, native to  
southeastern Brazil. It was raised to generic  
status by Cronquist in 1946, a transfer sub-  
stantiated by the anatomy of the secondary  
xylem.

Literature Cited

1. Aubreville, A.  
1964. Sapotacées. Adansonia Memoire No. 1:1-147.
2. Baehni, Charles.  
1965. Memoires sur les Sapotacees. III. Inventaire des genres.  
Boissiera 11:142.
3. Cronquist, Arthur.  
1946. Studies in the Sapotaceae. VI. Miscellaneous notes. Bull.  
Torrey Bot. Club 73(5):466-467.
4. Kukachka, B. F.  
1978. Wood anatomy of the neotropical Sapotaceae. VII. Chryso-  
phyllum. USDA For. Serv. Res. Pap. FPL 331. For. Prod. Lab.,  
Madison, Wis.

Availability Codes	
Dist	Avail and/or special
A	

Availability Codes

Standard	<input checked="" type="checkbox"/>
TAS	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Continuation	<input type="checkbox"/>

Dist

Avail and/or special

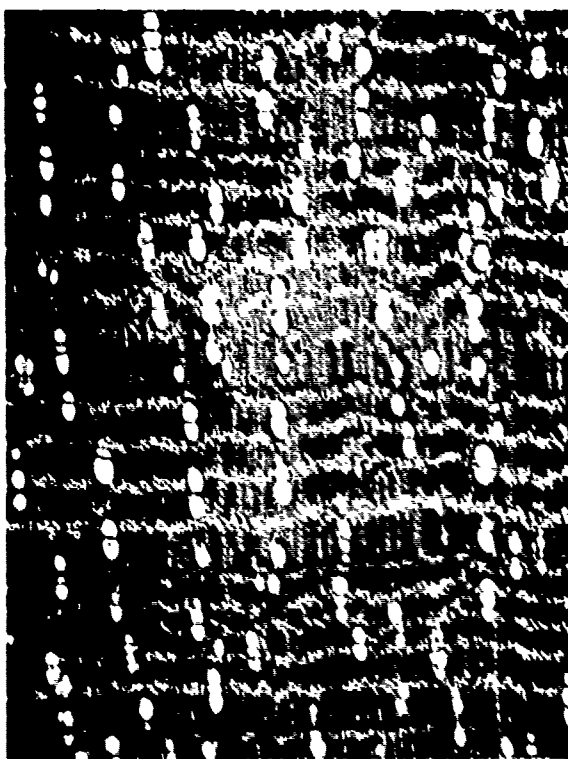


Figure 1.--*Diploen cuspidatum*, pore and parenchyma arrangement (Hoehne S358) x 30.

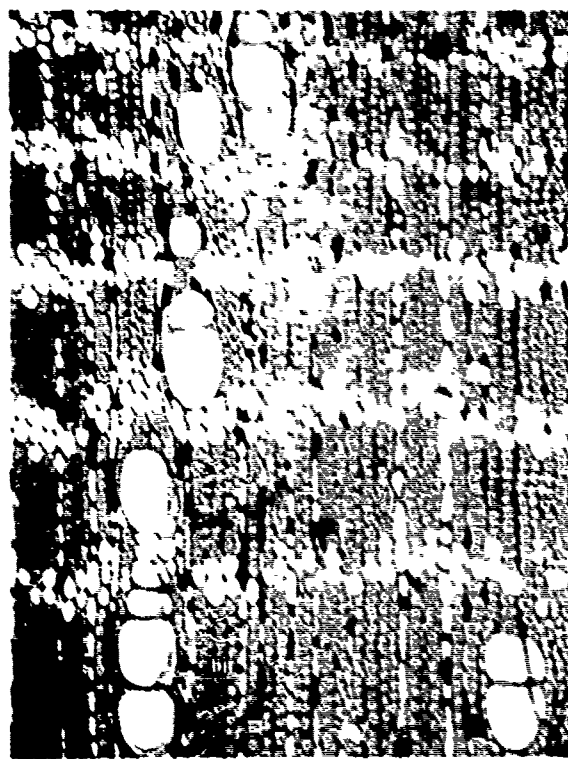


Figure 2.--*D. cuspidatum* illustrating irregular seriation of axial parenchyma (X 110).

2.5-5-12-79