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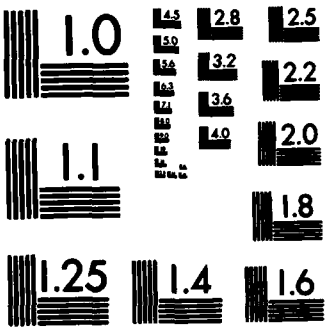

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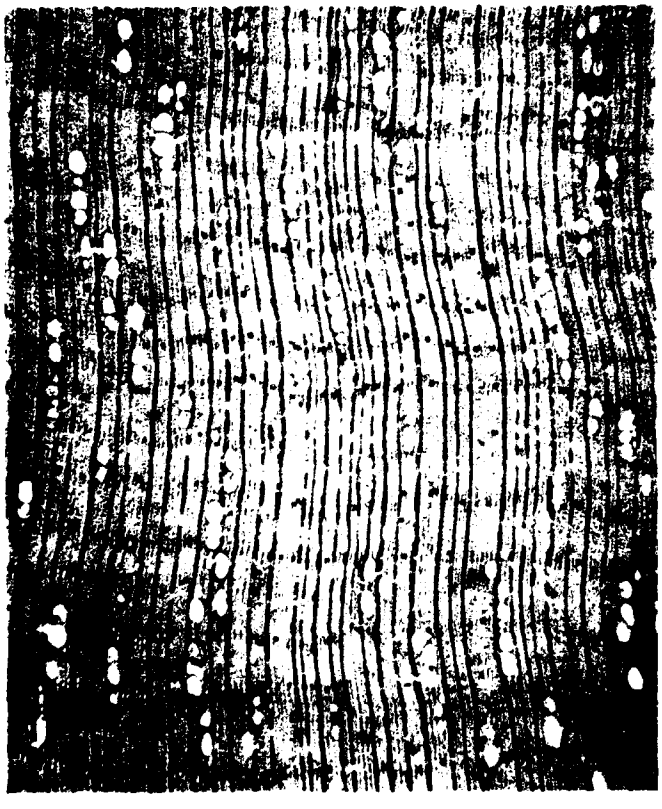
WOOD ANATOMY OF THE NEOTROPICAL SAPOTACEAE

XXX. PSEUDOCLADIA

RESEARCH PAPER FPL 418

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

OCTOBER 1982



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Abstract

Pseudocladia is a small genus of six species of trees occurring in Guyana, Surinam , Brazil, and adjacent Venezuela. Although first described by Pierre in 1891, it soon became submerged in the extremely large genus *Pouteria* until 1961 when Aubréville reinstated it to generic status. The woods are very hard, heavy, and rather drab brown and lusterless. Its affinities appear to be with *Sandwithiodoxa* which occupies the same range.

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 *Pseudocladia* is the thirtieth 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
II. Mastichodendron--Res. Pap. FPL 326
III. Dipholis--Res. Pap. FPL 327
IV. Achrouteria--Res. Pap. FPL 328
V. Calocarpum--Res. Pap. FPL 329
VI. Chloroluma--Res. Pap. FPL 330
VII. Chrysophyllum--Res. Pap. FPL 331
VIII. Diploon--Res. Pap. FPL 349
IX. Pseudoxythece--Res. Pap. FPL 350
X. Micropholis--Res. Pap. FPL 351
XI. Prieurella--Res. Pap. FPL 352
XII. Neoxythece--Res. Pap. FPL 353
XIII. Podoluma--Res. Pap. FPL 354
XIV. Elaeoluma--Res. Pap. FPL 358
XV. Sandwithiodoxa--Res. Pap. FPL 359
XVI. Paralabatia--Res. Pap. FPL 360
XVII. Gambeya--Res. Pap. FPL 361
XVIII. Gomphiluma--Res. Pap. FPL 362
XIX. Chromolucuma--Res. Pap. FPL 363
XX. Manilkara--Res. Pap. FPL 371
XXI. Barylucuma--Res. Pap. FPL 372
XXII. Pradosia--Res. Pap. FPL 373
XXIII. Gayella--Res. Pap. FPL 374
XXIV. Ecclinusa--Res. Pap. FPL 395
XXV. Ragala--Res. Pap. FPL 396
XXVI. Myrtiluma--Res. Pap. FPL 397
XXVII. Sarcaulis--Res. Pap. FPL 398
XXVIII. Labatia--Res. Pap. FPL 416
XXIX. Eglerodendron--Res. Pap. FPL 417

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 comprehensive unit.

WOOD ANATOMY OF THE NEOTROPICAL SAPOTACEAE

XXX. PSEUDOCLADIA

By

B. F. Kukachka, Botanist[1/]

Forest Products Laboratory,[2/] Forest Service
U.S. Department of Agriculture

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Introduction

The genus Pseudocladia was described by Pierre in 1918 and was based on Lucuma lateriflora Benth. from the Santarem area of Para, Brazil. Pierre's new genus was not accepted by his contemporaries and subsequent students of the family who regarded it as a synonym of Pouteria. In 1961 Aubréville (1)[3/] reinstated Pseudocladia to generic status and increased the genus by two new combinations, P. scytalophora (Eyma) Aubr. and P. minutiflora (Britton) Aubr. In 1972 Aubréville (2) added two new species from Amazonas, Venezuela, P. orinocoensis Aubr. and P. neblinaensis Aubr. In Aubréville's key to his Poutériées of South America (1), Pseudocladia and Sandwithiodoxa key out together because they share a two-chambered ovary. They are then separated by the valvate corolla lobes of Sandwithiodoxa and the imbricated corolla lobes of Pseudocladia. Anatomically the two genera are rather similar and Sandwithiodoxa is separated by its larger intervessel pitting and the more conspicuous banding of the axial parenchyma.

Description

The following description is based on four specimens representing three species: P. minutiflora Cowan & Lindeman 39094 from Surinam, and Forest Dept. sn. from Guyana; P. orinocoensis Wurdack & Adderley 43111 from Venezuela; and P. scytalophora Lanjouw & Lindeman 2513 from Surinam.

General: Wood very hard and heavy; with a specific gravity range of 1.02 to 1.16. Color a rather drab, lusterless dark brown; a distinct heartwood not evident in the available specimens. Growth rings indistinct. Bark of one specimen (orinocoensis) is 2 mm thick, gray brown, very hard, and finely laminated.

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 radial-echelon arrangement; solitary pores present but more commonly in radial multiples of 2 to 4, infrequently to 6 or 8 (fig. 1). Maximum pore diameter in individual specimens ranges from 95 μm to 134 μm with an average of 115 μm.

Vessel member length averages 850 μm with a range of individual averages from 700 μm to 1,040 μm. Tyloses, when present, thick-walled or sclerotic. Perforation plates simple. Intervessel pit diameter 4 μm to 6 μm in P. minutiflora and 3 μm to 4 μm in P. orinocoensis and P. scytalophora.

Axial parenchyma banded, the individual bands 1 to 2, occasionally in-part 3-seriate. Cells with brown contents frequent. Silica occasionally present and then limited to cells with brown contents. Crystals and microcrystals not observed.

Wood rays 1-2 seriate; heterocellular (fig. 2). In P. minutiflora 1-2 seriate with a maximum body height of 236 μm to 355 μm; in P. orinocoensis and scytalophora the rays are essentially uniseriate with only an occasional ray showing the biseriate condition and attaining a maximum body height of 95 μm. Brown contents common. Silica present and commonly found only in those cells with brown contents; attaining maximum diameters of 10 μm to 20 μm in the different specimens. Lateral walls of erect marginals and square cells conspicuously pitted but not disjunct.

Wood fibers very thick-walled; the fiber length averages for the different specimens range from 1.27 mm to 1.96 mm with an overall average of 1.52 mm. Vascular tracheids abundant.

Silica content, determined by chemical analysis, ranges from 0.01 percent to 0.54 percent with an overall average of 0.23 percent.

Diagnostic features: Wood very hard and heavy with an average specific gravity of 1.11; drab and lusterless brown; growth rings not evident. Pores in radial-echelon arrangement; parenchyma banded, 1-2(3) seriate; intervessel pitting 3-4 μm or 4-6 μm in diameter. Silica present but generally sparse. Tracheids common.

May be confused with Sandwithiodoxa but here the parenchyma bands are more conspicuous, commonly 2-3 seriate and occasionally up to 4-5 seriate; pores are larger; intervessel pitting is 6(8) μm in diameter. Sandwithiodoxa was previously described in this series (3).

Literature Cited

1. Aubréville, Andre.
   1961. Notes sur des Poutériées Americaines. Adansonia 1:2:165.

2. Aubréville, Andre.
   1972. Sapotaceae. Memoirs New York Bot. Gard. 23:204.

3. Kukachka, B. F.
   1980. Wood Anatomy of the Neotropical Sapotaceae. XV. Sandwithiodoxa. USDA For. Serv. Res. Pap. FPL 359. For. Prod. Lab., Madison, Wis.

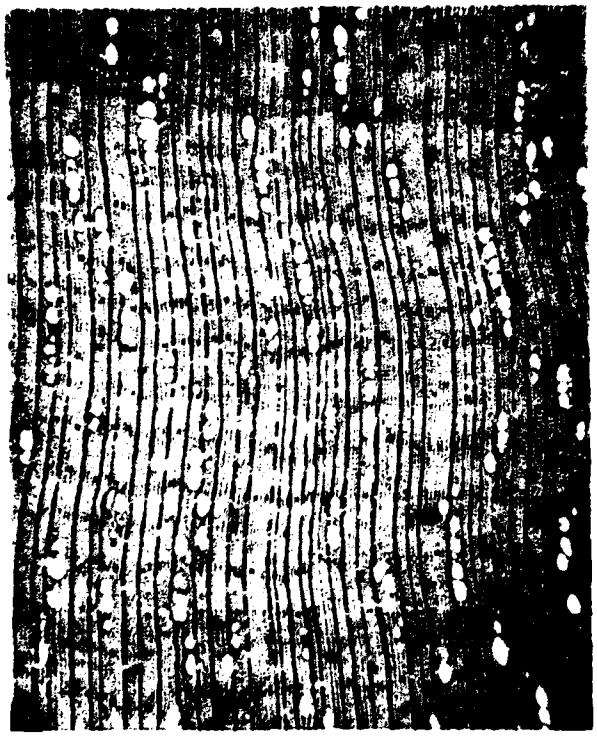

Figure 1.--Pseudocladia minutiflora, general topography of transverse section X 30. Cowan & Lindeman 39094 from Surinam. Note that pores not clearly defined are filled with sclerotic tyloses.

Figure 2.--Same as figure 1, tangential section X 110.

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4 p. (USDA For. Serv. Res. Pap. FPL 418).

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