WOOD ANATOMY
OF THE
NEOTROPICAL SAPOTACEAE
XXXVI. SYZYGIOPIA
RESEARCH PAPER FPL 424
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Abstract

*Syzygiopsis* consists of three species, *oppositifolia* and *oblanceolata* native to Amazonia and *sericea* of adjacent Venezuela. *Syzygiopsis* was first described by Adolpho Ducke in 1925 and consisted of the single species, *S. oppositifolia*. Later he had some doubts regarding the taxonomic status of his new genus but did not suggest any possible alternates or alliances. In 1942 Baehni transferred Ducke's monotypic genus to *Pouteria*, producing the new combination *Pouteria oppositifolia* (Ducke) Baehni; in 1957 van Royen made another new combination, *Planchonella oppositifolia* (Ducke) van Royen, making it a part of the large Asiatic genus *Planchonella*.

Anatomically, the wood shows little, if any, alliance with *Planchonella* but shares some features with species of *Pouteria*.

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 *Syzygiopsis* is the thirty-sixth 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. Achroureria--Res. Pap. FPL 328  
V. Calocarpum--Res. Pap. FPL 329  
VI. Chloroloma--Res. Pap. FPL 330  
VII. Chrysophyllum--Res. Pap. FPL 331  
VIII. Diplooon--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. Gymbeya--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. Sarcaulus--Res. Pap. FPL 398  
XXVIII. Labatia--Res. Pap. FPL 416  
XXIX. Eglerodendron--Res. Pap. FPL 417  
XXX. Pseudocladia--Res. Pap. FPL 418  
XXXI. Pouteria--Res. Pap. FPL 419  
XXXII. Richardella--Res. Pap. FPL 420  
XXXIII. Englerella--Res. Pap. FPL 421  
XXXIV. Franchetella-Eremoluma--Res. Pap. FPL 422  
XXXV. Urbanella--Res. Pap. FPL 423

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.
Adolfo Ducke described the genus *Syzygiopsis* in 1925 but later (4) changed his opinion and stated "Barylucuma and *Syzygiopsis* which I had proposed on the basis of their opposite leaves cannot be maintained. The problem of placing these plants in good genera remained unsolved." Ducke's single species, *Syzygiopsis oppositifolia*, was transferred to *Pouteria oppositifolia* (Ducke) Baehni (2) in 1942. In 1946 Cronquist (3) described another species, *Syzygiopsis sericea*, with the qualifying statement "In the absence of flowers, the generic position of this species cannot be determined with certainty, but the leaf veination is so similar to that of *Syzygiopsis oppositifolia* that I am convinced the two are congeneric." In 1957 van Royen (5) transferred *Syzygiopsis oppositifolia* to the Asiatic genus *Planchonella* making the new combination *Planchonella oppositifolia* (Ducke) van Royen. Aubréville (1) accepted Ducke's monotypic genus *Syzygiopsis oppositifolia* even though the floral structure was not distinguishable from several other genera of the Pouteriaceae because it was easy to identify by its opposite lanceolate leaves and distinctive nervation. At the present time this genus consists of three species, the most recent being *S. ob lanceolata* Pires; *oppositifolia* and *ob lanceolata* are Amazonian and *sericea* is from Venezuela.

*Description*

Genus description is based on nine specimens representing three species of *Syzygiopsis*.

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: Wood light brown with no apparent heartwood; specific gravity average 0.83 with the individual specimens ranging from 0.70 to 0.90. Inner bark reddish-brown and on three samples ranging from 2 to 6 mm in thickness. In sericea the bark is 2 mm thick and fissured, producing a cubical pattern; in the other two specimens the bark is smooth.

Anatomical:

Pores essentially diffuse (figs. 1,3,4) or with tendency toward radial alignment in oblanceolata. Pores solitary but more commonly in radial multiples of 2-4 (6); maximum pore diameter of individual specimens ranging from 95 to 158 \( \mu m \); largest in sericea.

Vessel member length averages 680 \( \mu m \) with individual specimens ranging from 490 to 920 \( \mu m \); species averages were 810 \( \mu m \) for oblanceolata, 590 \( \mu m \) for oppositifolia, and 720 \( \mu m \) for the single specimen of sericea. Intervessel pitting 6-8 \( \mu m \) in diameter. Tyloses, when present, thin-walled. Perforation plates simple.

Axial parenchyma irregularly banded, wavy and frequently discontinuous; individual bands irregularly 1-3 (4) seriate. Cells only occasionally with brown contents except in sericea where they are abundant. Silica, rhombic crystals, and microcrystals not observed.

Wood rays 1-2 seriate in oblanceolata and sericea, 1-3 seriate in oppositifolia; heterocellular (fig. 2). The maximum body height of the multiseriate portion ranges from 197 to 394 \( \mu m \) with an overall average of 315 \( \mu m \). Commonly with brown contents. Vessel-ray pitting irregular in shape and size but commonly obovoid and linear. Silica particles occur in the tabular, square, and upright ray cells; more or less spheroidal in shape and attaining diameters of 8-20 \( \mu m \) in different specimens. Pitting on lateral walls of upright and square cells abundant and fine. Rhombic and microcrystals not observed.

Wood fibers moderately thick-walled; average length of different specimens ranges from 1.05 to 1.56 mm with an overall average of 1.29 mm. Fiber pits distinct and abundant in sericea. Vascular tracheids present but not always detectable in prepared sections.

Silica content determined by chemical analysis ranged from 0.09 percent to a maximum of 2.44 percent with an overall average of 0.60 percent.

Diagnostic features: Wood light brown with an average specific gravity of 0.83; dull and lusterless. Axial parenchyma irregularly banded, wavy to discontinuous. Pores in diffuse arrangement with an average maximum diameter of 123 \( \mu m \). Wood rays 1-3 seriate with abundant brown contents and silica. Intervessel pitting 6-8 \( \mu m \) in diameter. Rather similar in many respects to Pouteria but here the parenchyma bands are in uniform straight lines.
Literature Cited

1. Aubrédville, Andre.

2. Baehni, Charles.
   1942. Mémoires sur les Sapotacées. II. Le Genre Pouteria.
   Candollea 9:359.


4. Ducke, Adolpho.
   1942. New and noteworthy Sapotaceae of Brazilian Amazonia.

5. van Royen, P.
   1957. Sapotaceae of the Malaysian area. VII. Planchonella.
   Blumea 8(2):367.

U.S. Forest Products Laboratory

Wood anatomy of the neotropical Sapotaceae: XXXVI.
Syzygiopsis, by B. F. Kukachka, FPL.

Syzygiopsis consists of three species, oppositifolia and ob lanceolata native to Amazonia and sericea of adjacent Venezuela. Syzygiopsis was first described by Adolpho Ducke in 1925 and consisted of the single species, S. oppositifolia. Later he had some doubts regarding the taxonomic status of his new genus but did not suggest any possible alternates or alliances. In 1942 Baehni transferred Ducke's monotypic genus to Pouteria, producing the new combination Pouteria oppositifolia (Ducke) Baehni; in 1957 van Royen made another new combination, Planchonella oppositifolia (Ducke) van Royen, making it a part of the large Asiatic genus Planchonella.

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<table>
<thead>
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<th>Species</th>
<th>Collector and number</th>
<th>Sp. gr.</th>
<th>Si</th>
<th>MPD</th>
<th>VML</th>
<th>FL</th>
<th>IV</th>
<th>R</th>
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1/ Sp. gr. = specific gravity; Si = silica content; MPD = maximum tangential pore diameter; VML = vessel member length; FL = fiber length; IV = intervessel pit diameter; R = maximum ray seriation; MBH = maximum body height of multiseriate portion of wood rays. Silica analysis by Martin F. Wesolowski, Chemist, FPL.
Figure 1.--Syzygiopsis oppositifolia, cross section X 30 (E. Oliveira 969).

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

Figure 3.--S. oblaceolata, cross section X 30 (M. Pires 10811).

Figure 4.--S. sericea, cross section X 30 (Ll. Williams 15074).