

www.e-rara.ch

The Silva of North America

Lauraceae - Juglandaceae

Sargent, Charles Sprague

Boston and New York, MDCCCXCV [1895]

ETH-Bibliothek Zürich

Shelf Mark: Rar 9459: 7

Persistent Link: <https://doi.org/10.3931/e-rara-48688>

Platanus.

www.e-rara.ch

Die Plattform e-rara.ch macht die in Schweizer Bibliotheken vorhandenen Drucke online verfügbar. Das Spektrum reicht von Büchern über Karten bis zu illustrierten Materialien – von den Anfängen des Buchdrucks bis ins 20. Jahrhundert.

e-rara.ch provides online access to rare books available in Swiss libraries. The holdings extend from books and maps to illustrated material – from the beginnings of printing to the 20th century.

e-rara.ch met en ligne des reproductions numériques d'imprimés conservés dans les bibliothèques de Suisse. L'éventail va des livres aux documents iconographiques en passant par les cartes – des débuts de l'imprimerie jusqu'au 20e siècle.

e-rara.ch mette a disposizione in rete le edizioni antiche conservate nelle biblioteche svizzere. La collezione comprende libri, carte geografiche e materiale illustrato che risalgono agli inizi della tipografia fino ad arrivare al XX secolo.

Nutzungsbedingungen Dieses Digitalisat kann kostenfrei heruntergeladen werden. Die Lizenzierungsart und die Nutzungsbedingungen sind individuell zu jedem Dokument in den Titelinformationen angegeben. Für weitere Informationen siehe auch [Link]

Terms of Use This digital copy can be downloaded free of charge. The type of licensing and the terms of use are indicated in the title information for each document individually. For further information please refer to the terms of use on [Link]

Conditions d'utilisation Ce document numérique peut être téléchargé gratuitement. Son statut juridique et ses conditions d'utilisation sont précisés dans sa notice détaillée. Pour de plus amples informations, voir [Link]

Condizioni di utilizzo Questo documento può essere scaricato gratuitamente. Il tipo di licenza e le condizioni di utilizzo sono indicate nella notizia bibliografica del singolo documento. Per ulteriori informazioni vedi anche [Link]

PLATANUS.

FLOWERS monœcious, in dense unisexual heads; sepals 3 to 6, imbricated in æstivation; petals and stamens as many as the sepals; disk 0; ovary superior, 1-celled; ovule usually solitary, suspended. Fruit an akene. Leaves alternate, stipulate, deciduous.

Platanus, Linnæus, *Gen.* 358 (1737); ed. 2, 462. — Adanson, *Fam. Pl.* ii. 377. — A. L. de Jussieu, *Gen.* 410. — Endlicher, *Gen.* 289. — Meisner, *Gen.* 347. — Baillon,

Hist. Pl. iii. 462. — Bentham & Hooker *Gen.* iii. 396. — Niedenzu, *Engler & Prantl Pflanzenfam.* iii. pt. ii. 140.

Trees, with watery juice, thick deeply furrowed scaly bark exfoliating from the branches and young trunks in large thin plates, terete zigzag pithy branchlets, infrapetiolar buds, and fibrous roots. Buds axillary,¹ conical, large, smooth and lustrous, nearly surrounded at the base by the narrow leaf-scars, in which appear a row of conspicuous dark fibro-vascular bundle-scars; covered by three deciduous scales, the two inner accrescent, strap-shaped, rounded at the apex at maturity and marking in falling the base of the branch with narrow ring-like scars; the outer scale surrounding the bud and splitting longitudinally with its expansion, the second light green, covered with a gummy fragrant secretion, and usually inclosing a bud in its axil,² the third coated with long rufous hairs. Leaves longitudinally plicate in veneration, alternate, broadly ovate, cordate, truncate, or wedge-shaped and decurrent on the petiole at the base, more or less acutely three to seven-lobed, and occasionally furnished with a more or less enlarged basal lobe,³ the lobes entire, dentate with remote minute callous teeth, or coarsely and remotely sinuate-toothed, palmately nerved, penniveined, the veins arcuate and united near the margins and connected by inconspicuous reticulate veinlets, clothed while young, like the petioles, stipules, and young branches, with caducous stellate sharp-pointed branching hairs,⁴ pale on the lower and rufous on the upper surface of the blade, long-petiolate, the petioles abruptly enlarged at the base and inclosing the buds, turning brown and withering in the autumn before falling; stipules membranaceous, laterally united below into a short tube surrounding the branch above the insertion of their leaf, acute and more or less free above, dentate or entire, thin and scarious on flowering shoots, broad and leaf-like on vigorous sterile branches, caducous, marking the branch in falling with narrow ring-like scars. Flowers minute, appearing with the unfolding of the leaves, in dense unisexual pedunculate solitary or spicate heads, the staminate and pistillate heads on separate peduncles or rarely united on the same

¹ The end of the branch of *Platanus* withers and falls at mid-summer with or before the stipules of the upper leaf by which it is nearly inclosed, leaving, close to the upper axillary bud which the following spring prolongs the branch, an elevated orbicular dark scar, persistent for two or three years (Henry, *Nov. Act. Nat. Cur.* xviii. 534, t. 40; xxii. 291, t. 26. — Foerste, *Bull. Torrey Bot. Club*, xx. 163, t. 147, f. 9).

² Hitchcock, *Trans. St. Louis Acad.* vi. 138.

³ The basal lobes, which vary greatly in size and shape, usually occur only on large leaves produced on vigorous shoots from the stumps of trees that have been cut down. They are figured by L. F. Ward (*Proc. U. S. Nat. Mus.* xi. 39, t. 17-22 [*The Palæont-*

logic History of the Genus Platanus]; *American Naturalist*, 1878, t. 28 [*Origin of the Plane-tree*]), who regards them as evidences of the descent of our existing American Plane-trees from extinct ancestral types, as traces of the leaves of these with well developed basal lobes have been found in the rocks of the Laramie Group in the northern Rocky Mountain region.

⁴ The peculiar hairs in the thick coat of tomentum which covers the young leaves and shoots of *Platanus*, and which, easily detached by the wind, often floats in large flakes through the air in early spring, were well described and figured by Morren (*Bull. Acad. Brux.* iv. 447, t.), who found that they produced serious bronchial inflammation when taken into the nose or mouth.

peduncle; the sterile heads dark red on axillary peduncles; the fertile heads light green tinged with red on longer terminal peduncles, the lateral heads in the spicate clusters sessile and embracing the peduncle at maturity, usually persistent on the branches during the winter. Calyx of the staminate flower divided into three to six minute scale-like sepals slightly united at the base, about half as long as the three to six cuneiform sulcate scarious pointed petals. Stamens as many as the divisions of the calyx and opposite them; filaments short or nearly obsolete; anthers elongated, clavate, two-celled, the cells opening throughout their length by lateral slits, crowned by capitate pilose truncate connectives. Calyx of the pistillate flower divided into three to six, usually into four, rounded sepals much shorter than the acute petals. Staminodia scale-like, elongated-obovate, pilose at the apex. Ovaries as many as the divisions of the calyx, superior, sessile, ovate-oblong, surrounded at the base by long ridged jointed pale hairs persistent around the fruit, gradually narrowed into long simple styles slightly dilated and excurved toward the apex, bright red, papillose-stigmatic to below the middle along the ventral suture; ovules one or rarely two, suspended laterally, orthotropous, covered with two coats. Akene elongated-obovate, rounded and obtuse or acute at the apex, crowned with the remnants of the persistent style, one-seeded, light yellow-brown; pericarp thin, coriaceous. Seed elongated-oblong, suspended; testa thin and firm, light chestnut-brown. Embryo erect in thin fleshy albumen; cotyledons oblong, about as long as the elongated cylindrical erect radicle turned toward the minute apical hilum.¹

Platanus is now confined to temperate North America, where three species occur, to Mexico, southwestern Europe, Asia Minor, Persia, Afghanistan, and northwestern India. It flourished over a larger area and played a most important part in the forests of the northern hemisphere during the late cretaceous and the tertiary periods, when it inhabited Greenland and Arctic America in a form hardly distinguishable from the existing species of eastern North America and Europe, and then, spreading southward, was not driven from central Europe until the close of the tertiary period, during which it also inhabited with several species the mid-continental region of North America, from whence it has now entirely disappeared.² The genus is homorphous, and the six or seven species which are distinguished all resemble each other except in the form of the lobes of the leaves, in the amount of the pubescence on their lower surface, in the obtuse or pointed apex of the akene, and in the number of heads of flowers on the pistillate peduncles, which vary, however, in the same species.

Platanus produces hard and heavy, although not strong, light brown wood tinged with red, and containing numerous broad conspicuous medullary rays and bands of small ducts marking the layers of annual growth. The genus is not known to possess useful properties.

In southern and western Europe, Asia Minor, Abyssinia, northwestern India, and the United States, *Platanus orientalis*³ is frequently planted as a shade-tree in streets, avenues, and parks;

¹ Clarke, *Ann. & Mag. Nat. Hist.* ser. 3, i. 102, t. 6, f. 9-13. — Schoenland, *Bot. Jahrb.* iv. 308.

² Lesquereux, *U. S. Geolog. Surv.* vii. 181, t. 25-27; viii. 44, t. 3, f. 1, t. 7, f. 5, 249, t. 56, f. 4, t. 57, f. 1-2 (*Contrib. Foss. Fl. Western Territories*, ii., iii.); *Mem. Mus. Comp. Zool.* vi. pt. ii. 13, t. 7, f. 12, t. 10, f. 4, 5 (*Fossil Plants of the Auriferous Gravel Deposits of the Sierra Nevada*). — L. F. Ward, *6th Annual Rep. U. S. Geolog. Surv.* 1884-85, 552, t. 40, f. 8, 9, t. 41 (*Syn. Fl. Laramie Group*). — Saporta, *Origine Paléontologique des Arbres*, 195. — Zittel, *Handb. Paléontolog.* ii. 627, f. 343. — Jankó, *Bot. Jahrb.* xi. 451.

³ Linnæus, *Spec.* 999 (1753). — Pallas, *Fl. Ross.* i. pt. ii. 1, t. 51. — *Nouveau Duhamel*, ii. 1, t. 1. — Watson, *Dendr. Brit.* ii. 101, t. 101. — Sibthorp, *Fl. Græc.* x. 36, t. 945. — A. de Candolle, *Prodr.* xvi. pt. ii. 159. — Parlatore, *Fl. Ital.* iv. 373. — Bommer, *Les Platanus et leur Culture*, 10. — Boissier, *Fl. Orient.* iv. 1161. — Jankó, *l. c.* 449. — Hooker f. *Fl. Brit. Ind.* v. 594.

Platanus vulgaris, Spach, *Ann. Sci. Nat. sér.* 2, xv. 291 (excl. *angulosa*) (1841).

Platanus orientalis, of which several varieties are distinguished, grows naturally near mountain streams from the Grecian islands and peninsula to Afghanistan and Cashmere, and now occasionally spontaneously in southwestern Europe, where it was carried by the Romans, who shared with the ancient Greeks and Persians their veneration for this tree, with which they formed their groves and shaded their dwellings. (See Evelyn, *Sylva*, ed. Hunter, ii. 53. — Loudon, *Arb. Brit.* iv. 2033.) It is commonly planted as a shade-tree in the valleys of the northwestern Himalayas (Brandis, *Forest Fl. Brit. Ind.* 434), in Persia (Fraser, *Historical and Descriptive Account of Persia*, 28), and southwestern Europe, where it is now used more generally than any other tree to adorn city streets and squares (Mathieu, *Flore Forestière*, ed. 3, 373), and occasionally in the middle and north Atlantic United States, where the Oriental Plane is hardy as far north as Massachusetts. The wood is used in Persia and other countries of western Asia for furniture and the construction of houses, and it is made into trays and other small articles of domestic use (Gamble, *Man. Indian Timbers*, 345).

*Platanus Mexicana*¹ is occasionally used for similar purposes in the cities of northern Mexico; and *Platanus occidentalis* is sometimes planted in the United States and central and western Europe.

Platanus in North America is remarkably free from the attacks of disfiguring insects,² although it suffers from severe fungal diseases.³ All the species of *Platanus* can be easily raised from seeds, which germinate the first year, and the varieties can be multiplied from layers or cuttings.⁴

The generic name, the classical name of the Plane-tree, from *πλατύς*, was adopted by Tournefort,⁵ and afterward by Linnæus.

¹ Moricand, *Bull. Ferr. Bot.* 1830, 79; *Mém. Soc. Phys. Genève*, vi. 39, t. 26 (*Pl. Nouv. Am.*). — A. de Candolle, *Prodr.* xvi. pt. ii. 160. — Hemsley, *Bot. Biol. Am. Cent.* iii. 162.

Platanus occidentalis, var. *Mexicana*, Jankó, *Bot. Jahrb.* xi. 451 (1890).

This noble tree, which is planted in the streets of the cities of northeastern Mexico, is distinguished by the thick coat of silvery white tomentum which covers the under surface of the mature leaves, which, flickering in the wind, make it the most beautiful of Plane-trees.

² Only a few species of insects are known to live upon the American Plane-trees, and none of them cause serious injuries. *Chalcophora campestris*, Say, lives in the dead wood, and the larvæ of several moths are occasionally found upon the foliage. *Cirrha platanella*, Chambers, lives on the under side of the leaves, which are also fed upon by a number of leaf-miners, including *Nepticula platanella*, Clemens, *Nepticula maximella*, Chambers, and *Nepticula Clemensella*, Chambers. A species of *Corythuca* is sometimes abundant on the leaves, from which it sucks the juices, and a plant-louse, *Lachnus Platanicola*, Riley, is sometimes found on these trees.

³ The different species of *Platanus* are peculiarly subject to diseases caused by fungi, several of which produce serious injury, the most widely spread being caused by the growth of *Glaosporium*

nervisequum, Saccardo, which attacks *Platanus occidentalis*, *Platanus racemosa*, and the Old World *Platanus orientalis*. This fungus was first discovered in Germany more than twenty years ago, but its occurrence in the United States was not recognized by botanists until recently. It is now known to be common throughout nearly all parts of the country where *Platanus occidentalis* and *Platanus racemosa* grow spontaneously or are cultivated, and to it may perhaps be referred the cause of the disease of *Platanus* in the eastern states recorded as long as fifty years ago. Its external portion is small and not easily recognized except by close observation, appearing in the form of small black spots or lines which lie close to the veins of the leaves. The disease makes its appearance soon after the leaves have expanded, causing them to turn brown, shrivel, and fall. No practical remedy for it has yet been suggested, for as the mycelium of the fungus is in the leaves and petioles, and probably also in the younger stems, little benefit can be expected from spraying the trees with sulphate of copper or other poisons. A large number of other fungi are found on the trunks and branches of *Platanus*, although none of them cause well-defined diseases in the United States.

⁴ Buc'hoz, *Dissertations sur le Cèdre du Liban, Le Platane et le Cytise*, 17. — Gasparrini, *Notes sur la Culture du Sophora, du Platane et de l'Aune*, 18. — Cobbett, *Woodlands*, 470.

⁵ *Inst.* 590, t. 363.

CONSPECTUS OF THE NORTH AMERICAN SPECIES.

- Leaves broadly ovate, obscurely 3 to 5-lobed, the lobes mostly serrulate-toothed, truncate or rarely wedge-shaped at the base. Fruit usually solitary 1. P. OCCIDENTALIS.
- Leaves deeply 5-lobed, the lobes entire, remotely and obscurely dentate or rarely sinuate-toothed, truncate or rarely slightly cordate or wedge-shaped at the base. Fruit racemose 2. P. RACEMOSA.
- Leaves deeply 3 to 7-lobed, the lobes elongated, slender, entire or rarely remotely dentate, deeply cordate or rarely wedge-shaped or truncate at the base. Fruit racemose 3. P. WRIGHTII.

PLATANUS OCCIDENTALIS.

Sycamore. Buttonwood.

LEAVES broadly ovate, obscurely 3 to 5-lobed, the lobes usually serrulate-toothed, truncate or rarely wedge-shaped at the base. Head of fruit usually solitary.

- Platanus occidentalis*, Linnæus, *Spec.* 999 (1753). — Miller, *Dict.* ed. 8, No. 2. — Du Roi, *Harbk. Baumz.* ii. 134. — Wangenheim, *Nordam. Holz.* 31, t. 13, f. 31. — Marshall, *Arbust. Am.* 105. — Moench, *Bäume Weiss.* 78; *Meth.* 358. — Evelyn, *Sylva*, ed. Hunter, ii. 54, t. — Walter, *Fl. Car.* 237. — Abbot, *Insects of Georgia*, ii. t. 55. — Willdenow, *Berl. Baumz.* 224; *Spec.* iv. pt. 1, 474; *Enum.* 984. — Schmidt, *Oestr. Baumz.* iii. 126, t. 8. — Castiglioni, *Viag. negli Stati Uniti*, ii. 327. — Borkhausen, *Handb. Forstbot.* i. 666. — Michaux, *Fl. Bor.-Am.* ii. 163. — Poiret, *Lam. Dict.* v. 438. — *Nouveau Duhamel*, ii. 6, t. 2. — Persoon, *Syn.* ii. 573. — Desfontaines, *Hist. Arb.* ii. 545. — Du Mont de Courset, *Bot. Cult.* ed. 2, vi. 435. — Schkuhr, *Handb.* iii. 274, t. 306. — Michaux, *Hist. Arb. Am.* iii. 184, t. 3. — Pursh, *Fl. Am. Sept.* ii. 635. — Bigelow, *Fl. Boston.* 233. — Nuttall, *Gen.* ii. 219. — Hayne, *Dendr. Fl.* 171. — Elliott, *Sk.* ii. 620. — Sprengel, *Syst.* iii. 865. — Watson, *Dendr. Brit.* ii. 100, t. 100. — Audubon, *Birds*, t. 206. — Hooker, *Fl. Bor.-Am.* ii. 158. — Torrey, *Fl. N. Y.* ii. 218. — Darlington, *Fl. Cestr.* ed. 3, 283. — Agardh, *Theor. Syst. Pl.* t. 13, f. 1-2. — Hartig, *Forst. Culturpfl. Deutschl.* 446, t. 54. — Curtis, *Rep. Geolog. Surv. N. Car.* 1860, iii. 76. — Chapman, *Fl.* 418. — A. de Candolle, *Prodr.* xvi. pt. ii. 159. — Koch, *Dendr.* ii. 468. — Emerson, *Trees Mass.* ed. 2, i. 261, t. — Schnizlein, *Icon.* t. 97, f. 1-24. — Mathieu, *Flore Forestière*, ed. 3, 376. — Lauche, *Deutsche Dendr.* 354, f. 137. — Sargent, *Forest Trees N. Am.* 10th Census U. S. ix. 129. — Watson & Coulter, *Gray's Man.* ed. 6, 467. — Jankó, *Bot. Jahrb.* xi. 450. — Coulter, *Contrib. U. S. Nat. Herb.* ii. 410 (*Man. Pl. W. Texas*). — Niedenzu, *Engler & Prantl Pflanzenfam.* iii. pt. ii. f. 76. — Koehne, *Deutsche Dendr.* 206, f. 40, A. — Dippel, *Handb. Laubholz.* iii. 279, f. 152.
- Platanus lobata*, Moench, *Meth.* 358 (1794).
- Platanus hybridus*, Brotero, *Fl. Lus.* ii. 487 (1804).
- Platanus vulgaris*, ϵ *angulosa*, Spach, *Ann. Sci. Nat.* sér. 2, xv. 293 (1841); *Hist. Vég.* xi. 79. — Bommer, *Les Platanes et leur Culture*, 17.
- Platanus occidentalis*, var. *Hispanica*, Wesmael, *Mém. Soc. Sci. Hainaut*, sér. 3, i. 12, f. 5 (1867). — Koehne, *Deutsche Dendr.* 206.
- Platanus occidentalis*, β *lobata*, Bommer, *Les Platanes et leur Culture*, 17, f. 5, 6 (1869).

A tree, occasionally one hundred and forty to one hundred and seventy feet in height, with a trunk sometimes ten or eleven feet in diameter above its abruptly enlarged base, often divided near the ground into several large secondary trunks, or rising seventy or eighty feet as a straight column-like shaft free from branches and with little diminution of diameter;¹ and massive spreading limbs which form a broad open rather irregular head often exceeding a hundred feet in diameter, their extremities usually erect or sometimes more or less pendulous. The bark at the base of large trunks is two to three inches thick, dark brown, and divided by deep furrows into broad rounded ridges separating on the surface into small thin appressed scales; thickest near the ground, it gradually grows thinner, and passes into the bark of the younger trunks and large branches, which rarely exceeds half an inch in thickness, and is dark reddish brown, and broken into small oblong thick appressed plate-like scales, while high on the tree it is smooth and light gray, and separates into large thin scales, which, in falling, expose large irregular surfaces of the pale yellow, whitish, or greenish inner bark. The branchlets are at first coated, like the leaves, the petioles, and stipules, with thick pale tomentum, which soon disappears; during their first summer they are dark green and glabrous, and marked with many minute oblong pale lenticels, and during their first winter they are dark orange-brown and rather lustrous, becoming light gray in their second year or light reddish brown when they cast their pale membranous outer bark. The leaves are broadly ovate, more or less deeply three to five-lobed by broad shallow sinuses rounded in the bottom, the lobes being broad, acuminate, sinuate-toothed with long straight or

¹ The large trunks of *Platanus occidentalis* are usually hollow to a considerable height above the ground.

curved remote acuminate teeth, or entire, with undulate margins; they are truncate or slightly cordate, or wedge-shaped and decurrent on the petioles at the base, with stout yellow ribs and veins, thin and firm, bright green on the upper surface, paler on the lower, and glabrous, with the exception of a coating of pale pubescence along the ribs and principal veins, and are four to seven inches in length and breadth, or twice as large on vigorous shoots, when they are frequently furnished with dentate basal lobes; they are borne on stout terete or slightly angled puberulous petioles covered with pale pubescence. The stipules are an inch to an inch and a half long and entire or sinuate-toothed. The peduncles are coated with pale tomentum, and generally bear one and sometimes two heads of flowers. The heads of fruit, which are usually solitary or rarely spicate, are an inch in diameter, and hang on slender glabrous stems three to six inches long. The akenes are about two thirds of an inch in length, and are truncate or obtusely rounded at the apex.

Platanus occidentalis inhabits the borders of streams and lakes and rich bottom-lands, and ranges from southeastern New Hampshire and southern Maine to northern Vermont and the valley of the Don near the northern shores of Lake Ontario,¹ westward to eastern Nebraska² and Kansas, and southward to northern Florida, central Alabama and Mississippi, and the valley of the Brazos River in Texas, and thence southwestward in Texas to the Devil's River valley. A common tree in all this region, it is most abundant and grows to its largest size on the bottom-lands of the basins of the lower Ohio and of the Mississippi Rivers.³

The specific gravity of the absolutely dry wood of *Platanus occidentalis* is 0.5678, a cubic foot weighing 35.39 pounds. It is largely used and is the favorite material for the boxes in which tobacco is packed, for ox-yokes, and butchers' blocks, and for furniture and the interior finish of houses, where its broad conspicuous medullary rays and cheerful color make it valuable.

Platanus occidentalis was introduced into English gardens by the younger Tradescant early in the seventeenth century,⁴ and the first account of it, published in 1640 in Parkinson's *Theatrum Botanicum*,⁵ relates to a tree cultivated in England. It is now occasionally planted in American and European⁶ parks and avenues, although as an ornamental tree its value is impaired by the fungal disease which strips it of its young leaves in spring, and stunts and often deforms its growth.

Always conspicuous from the pale often mottled bark which covers the upper parts of the trunk and branches, the Sycamore,⁷ which is the most massive if not the tallest deciduous-leaved tree of the North American forest, is a magnificent object as it grows in the deep alluvial soil of the bottom-lands of the Mississippi basin, with its long ponderous branches and its broad leafy crown of bright green cheerful foliage raised high above the heads of its sylvan associates.

¹ Brunet, *Cat. Vég. Lig. Can.* 45. — Macoun, *Cat. Can. Pl.* 432.

² Bessey, *Rep. Nebraska State Board Agric.* 1894, 105.

³ Ridgway, *Proc. U. S. Nat. Mus.* 1882, 73.

⁴ Aiton, *Hort. Kew.* iii. 365. — Loudon, *Arb. Brit.* iv. 2043, f. 1959, 1960.

⁵ *Platanus occidentalis aut Virginiensis*, 1427. — Boerhaave, *Ind. Alt. Hort. Lugd. Bat.* ii. 209.

Platanus Novi Orbis, foliis Vespertilionum alas referentibus, globulis parvis, Plukenet, *Alm. Bot.* 300.

Platanus occidentalis, Catesby, *Nat. Hist. Car.* i. 56, t. 56.

Platanus foliis lobatis, Linnæus, *Hort. Cliff.* 447. — Royen, *Fl. Leyd. Prodr.* 78. — Clayton, *Fl. Virgin.* ed. 2, 151.

Cephalanthus capitulis pendulis, Colden, *Act. Hort. Ups.* 1743, 85 (*Pl. Novebor.*).

⁶ It is frequently stated that *Platanus occidentalis* is common in European plantations; but, so far as I have been able to observe, it is now exceedingly rare in western and central Europe, where I have seen only a few individuals.

⁷ *Platanus occidentalis* is also sometimes called Button-ball tree and Water Beech. In Europe, Sycamore, the common name of the different Plane-trees in the United States, is always applied to *Acer Pseudo-Platanus*, and never to the Plane, while the Sycomorus of the ancients is the *Ficus Sycomorus* of northeastern Africa. (See *Garden and Forest*, ii. 349.)

EXPLANATION OF THE PLATES.

PLATE CCCXXVI. PLATANUS OCCIDENTALIS.

1. A flowering branch, natural size.
2. Diagram of a staminate flower.
3. Diagram of a pistillate flower.
4. A head of staminate flowers with most of the flowers removed, enlarged.
5. A staminate flower, enlarged.
6. A stamen, enlarged.
7. A pistillate flower, enlarged.
8. A pistil, enlarged.
9. Vertical section of an ovary, enlarged.
10. Portion of a branch and stipule, natural size.
11. A winter branchlet, natural size.
12. Portion of a branchlet showing bud and the base of a petiole, natural size.
13. Vertical section of a branchlet, bud and petiole, natural size.

PLATE CCCXXVII. PLATANUS OCCIDENTALIS.

1. A fruiting branch, natural size.
2. Vertical section of a head of fruit, natural size.
3. An akene, enlarged.
4. Vertical section of an akene, enlarged.
5. A seed, enlarged.
6. An embryo, enlarged.



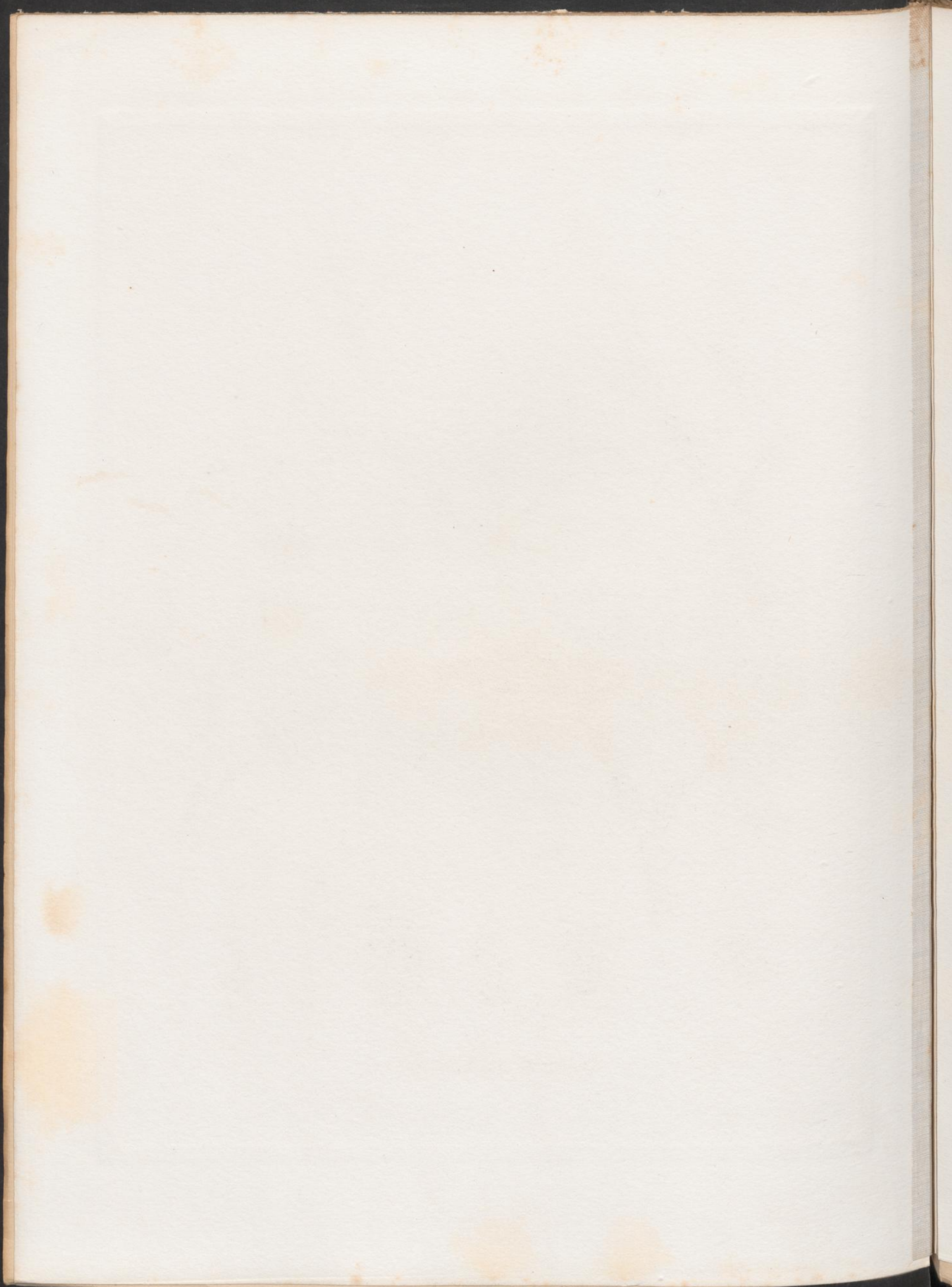
C.E. Faxon del.

Rapine sc.

PLATANUS OCCIDENTALIS, L.

A. Riocreux dirax t

Imp. J. Taneur, Paris.





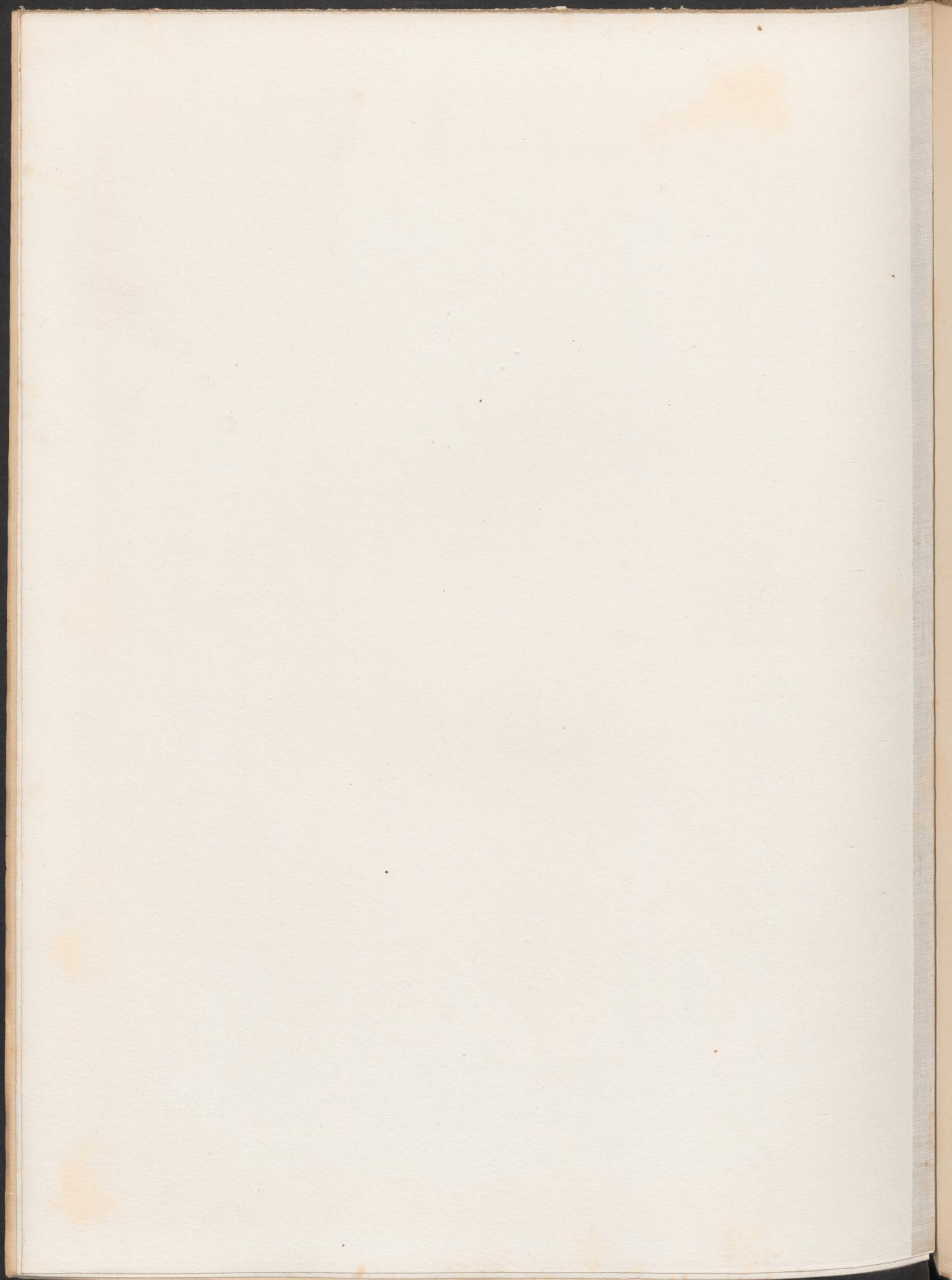
C.E. Faxon del.

Rapine sc.

PLATANUS OCCIDENTALIS, L.

A. Riocreux direxit

Imp. J. Taneur, Paris.



PLATANUS RACEMOSA.

Sycamore.

LEAVES deeply 3 to 5-lobed, the lobes entire, remotely and obscurely dentate or rarely sinuate-toothed, truncate or rarely slightly cordate or wedge-shaped at the base. Fruit racemose.

- Platanus racemosa*, Nuttall, *Sylva*, i. 47, t. 15 (1842). — Audubon, *Birds*, t. 362. — Bentham, *Pl. Hartweg*. 336. — Newberry, *Pacific R. R. Rep.* vi. 33, 89, t. 2, f. 10. — Torrey, *Bot. Mex. Bound. Surv.* 204; *Ives' Rep.* 27; *Bot. Wilkes Explor. Exped.* 457. — A. de Candolle, *Prodr.* xvi. pt. ii. 160. — Koch, *Dendr.* ii. 469. — Brewer & Watson, *Bot. Cal.* ii. 66. — Sargent, *Forest Trees N. Am.* 10th *Census U. S.* ix. 129. — Jankó, *Bot. Jahrb.* xi. 451. — Koehne, *Deutsche Dendr.* 206. — Dippel, *Handb. Laub-*
- holz.* iii. 278, f. 151. — Greene, *Man. Bay Region Bot.* 297. — Coville, *Contrib. U. S. Nat. Herb.* iv. 195 (*Bot. Death Valley Exped.*).
- Platanus occidentalis*, Hooker & Arnott, *Bot. Voy. Beechey*, 160, 390 (not Linnaeus) (1833).
- Platanus Californica*, Bentham, *Bot. Voy. Sulphur*, 54 (1844).
- Platanus Mexicana*, Torrey, *Sitgreaves' Rep.* 172 (not Moricand) (1853); *Pacific R. R. Rep.* vii. pt. iii. 20.

A tree, sometimes one hundred to one hundred and twenty feet in height, with a trunk occasionally nine feet in diameter above the broad tapering base, sometimes erect and free of branches for half its height, more often dividing near the ground into several secondary stems which are erect, inclining, or prostrate for twenty to thirty feet at their base, and thick ponderous more or less contorted long spreading branches which form an open irregular round-topped head; usually smaller and generally seventy to eighty feet in height, with a trunk two to three feet in diameter. The bark at the base of the trunks of old individuals is three to four inches thick, dark brown, deeply furrowed, with broad rounded ridges separating on the surface into thin scales; higher on the trunk and on the branches it is thinner, smooth, and pale or almost white. The branches, which are coated at first with thick pale tomentum, which soon disappears, during their first winter are light reddish brown and marked with numerous small lenticels, and gradually grow darker in their second and third years. The leaves are three or five-lobed to below the middle, with acute or acuminate lobes, which are entire, dentate with remote minute callous-tipped teeth, or occasionally coarsely sinuate-toothed, and broad sinuses acute or rounded in the bottom; they are usually cordate or sometimes truncate, or wedge-shaped and decurrent at the base on the petioles, six to ten inches in length and breadth, thick and firm, light green on the upper surface, and on the lower surface paler and more or less thickly coated with pale pubescence, which is most abundant along the broad midribs and primary veins; they are borne on stout pubescent petioles one to three inches long, and often do not all fall until spring. The stipules are an inch to an inch and a half in length, and entire or dentate. The peduncles are covered with pale pubescence, and usually bear four or five heads of staminate flowers or from two to seven heads of pistillate flowers, a head of staminate flowers occasionally appearing on the pistillate peduncle above the fertile heads. The heads of fruit hang on slender zigzag glabrous or pubescent stems six to ten inches in length, and are three quarters of an inch in diameter. The akene is acute or rounded at the apex, one third of an inch long, tomentose while young and glabrous at maturity.

Platanus racemosa is distributed from the valley of the lower Sacramento River in California southward through the interior valleys and coast ranges of the state, finding its southern home on San Pedro Martir Mountain in Lower California.¹ It inhabits the banks of streams, and is exceedingly common in all the valleys of the coast range from Monterey to the southern borders of the state,

¹ Brandegee, *Zoö*, iv. 209.

ascending the southern slopes of the San Bernadino Mountains to an elevation of three thousand feet above the level of the sea.¹

The specific gravity of the absolutely dry wood of *Platanus racemosa* is 0.4880, a cubic foot weighing 30.41 pounds.

Confounded with the Plane-tree of the eastern United States by the botanists who first explored the coast of southern California, *Platanus racemosa*, which is one of the noblest and most beautiful deciduous-leaved trees of the Pacific forests, was first distinguished by Thomas Nuttall, who found it at Santa Barbara in 1835.

¹ S. B. Parish, *Zoë*, iv. 344.

EXPLANATION OF THE PLATE.

PLATE CCCXXVIII. PLATANUS RACEMOSA.

1. A flowering branch, natural size.
2. A stamen, enlarged.
3. A pistil, enlarged.
4. A fruiting branch, natural size.
5. Vertical section of an akene, enlarged.
6. An embryo, enlarged.
7. A leaf, natural size.
8. A winter branchlet, natural size.



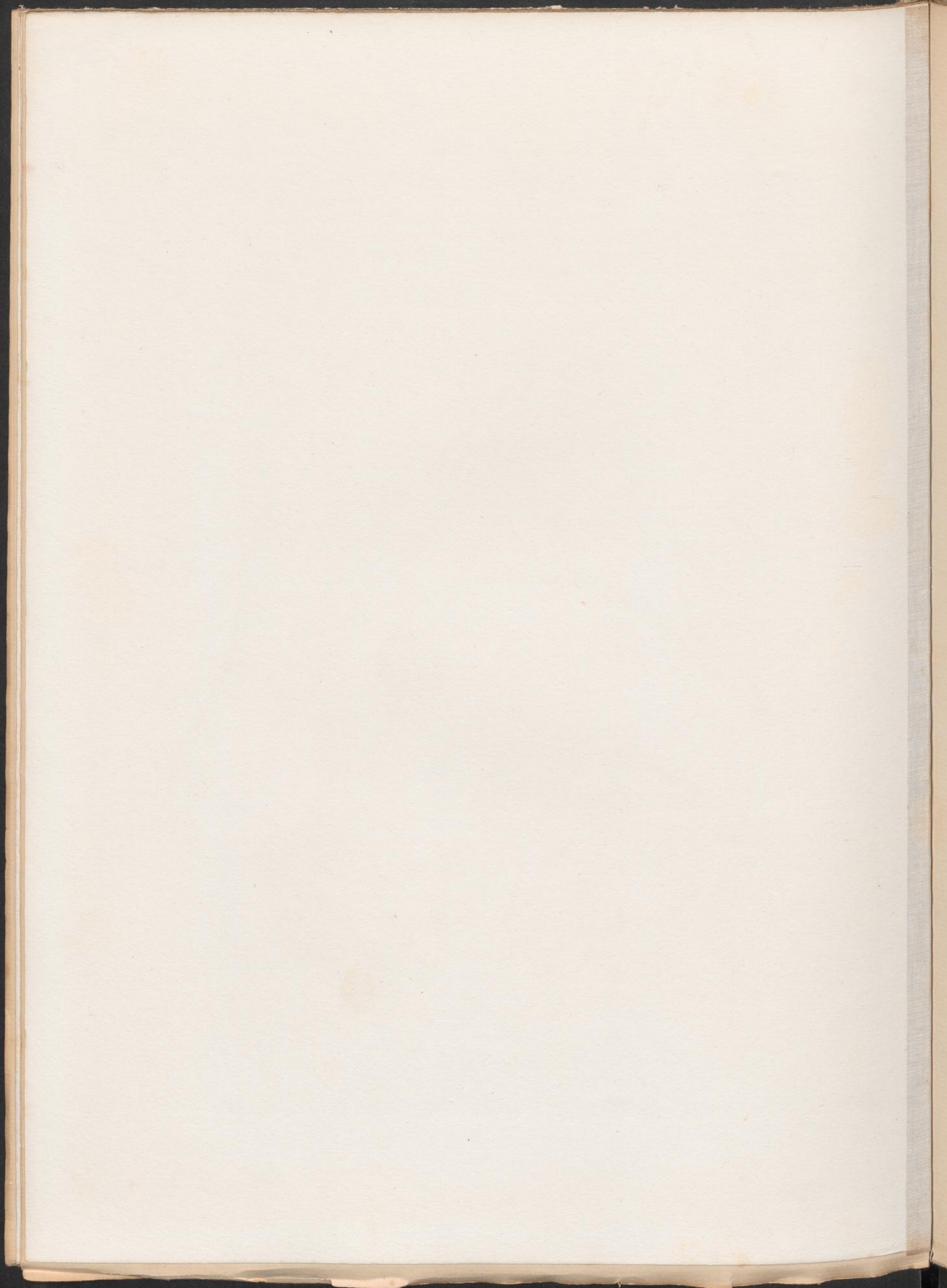
C.E. Faxon del.

Rapine sc.

PLATANUS RACEMOSA, Nutt.

A. Riocreux direx.

Imp. J. Taneur, Paris.



PLATANUS WRIGHTII.

Sycamore.

LEAVES deeply 3 to 7-lobed, the lobes elongated, slender, entire or rarely remotely dentate, usually deeply cordate or rarely wedge-shaped at the base. Fruit racemose.

Platanus Wrightii, Watson, *Proc. Am. Acad.* x. 349 (1875). — Rusby, *Bull. Torrey Bot. Club*, ix. 54. — Sargent, *Forest Trees N. Am.* 10th Census U. S. ix. 130. — Coulter, *Contrib. U. S. Nat. Herb.* ii. 410 (*Man. Pl. W. Texas*).
Platanus Mexicana, Torrey, *Emory's Rep.* 151 (not Moricand) (1848).
Platanus racemosa, Watson, *Pl. Wheeler*, 16 (not Nuttall) (1874). — Rothrock, *Wheeler's Rep.* vi. 239.

A tree, often sixty to eighty feet in height, with a straight trunk four or five feet in diameter at the base, gradually tapering and free from branches for twenty or thirty feet, or with a trunk dividing just above the surface of the ground into two or three large stems, usually more or less reclining, and often nearly prostrate for fifteen or twenty feet, and with thick contorted branches; of these the lowest frequently grow almost at right angles to the trunk, and are fifty or sixty feet in length, while the upper are usually erect at first, and then spread into a broad open handsome head. The base of the trunk is covered with dark bark three or four inches thick, deeply and irregularly divided into broad ridges, and covered on the surface with small appressed scales; ten or fifteen feet above the ground it grows thinner, separating into larger scales, and gradually passes into the bark of the upper trunk and branches, which is smooth, much thinner, and creamy white faintly tinged with green. The branchlets are slender, and are coated at first with thick pale tomentum, which soon begins to disappear; during their first winter they are glabrous or slightly puberulous, marked with minute scattered lenticels, and light brown tinged with red, or ashy gray, and gradually grow darker during their second and third years. The leaves are divided by narrow sinuses to below the middle, and sometimes nearly to the centre into three to seven, but usually into five, elongated acute lobes, which are entire, or dentate with callous-tipped teeth, or occasionally are furnished with one or two acuminate lateral lobes; they are sometimes deeply cordate by the downward projection of the lower lobes or are often truncate or wedge-shaped at the base; they are six to eight inches in length and breadth, thin and firm in texture, light green and glabrous above and coated with pale pubescence below, with narrow ribs and primary veins connected by rather conspicuous reticulate veinlets, and stout glabrous or puberulous petioles an inch and a half to three inches long. The peduncles are clothed with thick white tomentum, and bear two to four heads of flowers. The heads of fruit hang on slender glabrous stems six to eight inches in length, and are about three quarters of an inch in diameter. The akenes are glabrous, about one quarter of an inch long and truncate at the apex.

Platanus Wrightii inhabits the banks of streams in the mountain cañons of southwestern New Mexico, southern Arizona, and Sonora; on all the mountain ranges in New Mexico and Arizona, south of the high Colorado plateau, it is the largest and one of the most abundant of the deciduous-leaved trees, extending from the mouths of the cañons up to elevations of from five to six thousand feet above the level of the sea.

The specific gravity of the absolutely dry wood is 0.4736, a cubic foot weighing 29.51 pounds.

Platanus Wrightii was discovered in 1851 by Mr. Charles Wright¹ in southern Arizona during

¹ See i. 94.

his connection with the United States and Mexican Boundary Survey. Originally confounded with *Platanus racemosa*, it was first distinguished by Sereno Watson.¹

In the deep and sombre cañons of the Arizona mountains, *Platanus Wrightii* is a noble and beautiful object, rising high above the Walnuts, Willows, and Alders which mark the course of the streams, with its great wide-spreading pale sea-green branches and bright foliage thrown into clear relief against the sunburnt hills covered with dark Evergreen Oaks and darker Pines.

¹ Sereno Watson (1826-92) was born at Windsor Hill, Connecticut, and was graduated from Yale College in 1847; having taught school in different states, he studied medicine in the University of New York and later with an elder brother established at Quincy, Illinois. He practiced his profession during two years only, and then abandoned it to assume a business position in Alabama, where he resided from 1856 to 1861, beginning at this time the study of plants, although it was not until several years later, after a term in the Sheffield Scientific School, that he became a professional botanist.

In 1868 Dr. Watson was appointed botanist of the United States Geological Expedition which, under the leadership of Clarence King, explored the territory west of the Rocky Mountains adjacent to the fortieth parallel of latitude. In 1871 he published, with the aid of Professor D. C. Eaton, his classical report upon the plants he had collected on this expedition; this led to his receiving the appointment at Cambridge of assistant to Professor Asa Gray, whom he succeeded as curator of the Gray Herbarium of Harvard

College. He devoted the remainder of his life to a study of the flora of North America and to the care and development of the collections in his charge. In connection with Professor William H. Brewer, Dr. Watson prepared the botanical portion of the report of the Geological Survey of California; he was the author of a *Biographical Index of North American Botany*, issued in 1878, which unfortunately was not carried beyond the first volume, and of numerous papers published in the *Proceedings of the American Academy of Arts and Sciences*, in which some twelve hundred species of North American plants were first described by him, and many difficult groups were elaborated. In 1890, with Professor J. M. Coulter, he published an enlarged edition of Gray's *Manual of the Botany of the Northern United States*.

Serenoa, a genus of plants of the southern United States, established by the younger Hooker, commemorates the name of this modest and learned man, whose life was devoted to useful labor and noble endeavor.

EXPLANATION OF THE PLATE.

PLATE CCCXXIX. PLATANUS WRIGHTII.

1. A flowering branch, natural size.
2. A stamen, enlarged.
3. A pistil, enlarged.
4. A fruiting branch, natural size.
5. Vertical section of an akene, enlarged.
6. A seed, enlarged.
7. An embryo, enlarged.
8. A winter branchlet, natural size.



C.E. Faxon del.

Himely sc.

PLATANUS WRIGHTII, Watson.

A. Riocreux direx!

Imp. J. Taneur, Paris.

