

# CULTIVAR CHECKLIST FOR *LIQUIDAMBAR* AND *LIRIODENDRON*

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**Abstract.** Cultivars of *Liquidambar formosana*, *Liquidambar styraciflua* and *Liriodendron tulipifera* are listed and described. A fruitless cultivar of *L. styraciflua* is discussed.

The genera *Liquidambar* and *Liriodendron* are similar in that both contain very few taxa, and are represented by major species in eastern North America and China. Likewise, the greatest number of cultivars of both eastern American species — *Liquidambar styraciflua* L. (sweetgum) and *Liriodendron tulipifera* L. (tuliptree) — have been selected by horticulturists and botanists from trees growing outside their native ranges. Both of these species are interesting “exotics” because of their unusually shaped leaves. Autumn leaf color of the American tuliptree can be an attractive yellow while the leaves of American sweetgum may range from yellow through red to deep maroon.

Sweetgum has a wide range of environmental adaptability but extensive planting of this species as a landscape tree within its native range, especially as a street tree, has been limited because of the objectionable fruits that can hinder pedestrian and vehicular traffic. Tuliptree is not as site-adaptable as sweetgum, but it does produce attractive flowers. These flowers would enhance the landscape use of tuliptree if they were more visible on a sexually mature tree of restricted stature. The tuliptree cultivar ‘Ardis,’ a dwarf or semi-dwarf tree, might be an attractive landscape tree, but more testing must be done.

There is, however, a fruitless sweetgum selection scarcely known to the nursery trade. As mentioned in the cultivar listings, Rehder described ‘Rotundiloba’ as a *forma* in 1931, based on a specimen collected in Pinehurst, North Carolina. The cultivar was distinguished only by the rounded lobes of the leaves. Thirty years later, J.L. Thomas (*Arnoldia* 21:59-64, 1961) summarized

the forms and cultivars known to him and also mentioned only the rounded leaf lobes of this tree.

However, soon after the popularization of ‘Palo Alto’ and other cultivars developed by the Saratoga Horticultural Foundation in Saratoga, California (ca. 1965), new information began to surface. In a letter dated January 17, 1968, Dr. Herbert Hechenbleichner of the University of North Carolina at Charlotte told Maunsell Van Renssalaer, then Director of the Foundation, about a ca. 40-year-old sweetgum in Chapel Hill, North Carolina that had never fruited. The leaves of this tree had rounded, instead of pointed, lobes. In response to the Foundation’s request for scion wood, the scions were supplied by the nursery of Lionel Melvin (Pleasant Garden, North Carolina) under the name “rotundiloba.” Mr. Melvin mentioned that he had 2 large trees of that “form” in his nursery. Another letter was received by the Foundation on June 1, 1970 from Herbert P. Smith of Liberty, North Carolina stating that he had a 2-year-old tree that he had budded from “Rotundiloba,” a sterile sweetgum that was found in North Carolina in 1931. Thus it would appear that ‘Rotundiloba,’ which we consider a cultivar, has been propagated to a limited extent and the fruitless characteristic observed over an extended period of time.

Mr. Barrie D. Coate, Director of Horticulture at the Saratoga Horticultural Foundation, has informed us that the Foundation propagated 10 trees of ‘Rotundiloba’ from the scion wood received in 1968. The autumn leaf color of this cultivar was deep red to bright red in California and no fruit had been produced by the trees up to 1983. However, the Foundation decided not to pursue propagation and introduction of the cultivar because of what they considered a serious “split-crotch” habit of growth. Apparently, this cultivar frequently produces two or more leading shoots and one or more of those shoots that do not become the leader develops strongly at a narrow

angle to the leader. This narrow-angled "branch" then becomes so heavy that it is especially susceptible to splitting off in storms. Whether this objectionable growth characteristic would pertain under other environmental conditions should be investigated.

It might appear that in these current checklists (especially *Liriodendron*) and others of our recent publications, we have included a large number of names that could be considered "superfluous" by a practical horticulturist or nurseryman. Indeed, many of the older cultivar names were assigned to what may be considered minor variations and many of these selections cannot now be found, even in arboreta or botanical gardens. We have found that the only reasonable approach to these cultivar compilations, many done for the first time, is to be as complete as possible. Our listings do indicate the range of variants that can exist within a species and that might be encountered again in the future. Also, trees live a long time, and a cultivar thought to be "lost" might well be rediscovered.

Ever since the U.S. National Arboretum became the International Registration Authority for unassigned woody genera on January 1, 1981, we have attempted to publish comprehensive and authoritative cultivar checklists for important landscape tree species. In trying to establish and maintain stability in the nomenclature of cultivated trees we have followed the rules and recommendations of the International Code of Nomenclature for Cultivated Plants. But, as with any set of rules, there is room for interpretation, and we have tried to be conservative.

In assigning the proper cultivar names in *Liriodendron tulipifera*, there was some question of gender. *Liriodendron* (Greek) is neuter, but the "a" ending in *tulipifera* (Latin) appears to be feminine. Thus, many cultivar names were first used with an "a" ending. However, the original scientific name for tuliptree was *Tulipifera liriodendron* and the "a" ending in *tulipifera* was retained when it became a species epithet. Since *Liriodendron* is neuter, we have regarded all original cultivar names ending in "a" as incorrect, and have changed these endings to "um."

In the listings that follow, we have not included the other species in these genera, *Liquidambar*

*orientalis* L. from Turkey and *Liriodendron chinense* (Hemsley Sargent from China, for which no cultivar names could be found. As in previous checklists **VALID CULTIVAR** names are given in boldface capitals and **INVALID CULTIVAR** names in lightface capitals.

## LIQUIDAMBAR

### *Liquidambar formosana*

- AFTERGLOW** (Saratoga Horticultural Foundation, Saratoga, California, Wholesale Price List, April 1, 1961, p. 1) — a broad asymmetrical tree.
- MONTICOLA** (C.S. Sargent, *Plantae Wilsonianae*, Vol. 1, 1913, p. 422) — as var. *monticola* Rehder & Wilson, with glabrous leaves. Name not valid at the cultivar level and perhaps, with further extensive exploration, not overly significant as a variety.

### *Liquidambar styraciflua*

- AUREA** (H. Kohankie & Son, Painesville, Ohio, Price List, Fall 1940-Spring 1941, p. 76) — as *L. styraciflua aurea*, Golden Sweetgum.
- AUREA COMPACTA** (J. Clarke Nurs., San Jose, California, Wholesale Price List 1966-67, p. 10) — a beautiful new golden form of the tuliptree; makes a small compact tree. Name invalid because in Latin form after January 1, 1959.
- AUREUM** (E.H. Scanlon & Assoc., Olmsted Falls, Ohio, Wholesale List No. 14, Fall 1962-Spring 1963, p. 40) — leaves irregularly variegated with gold sashes, streaks, and speckles; in the fall the golden portion of the leaf turns pink and the green part turns red. A 14-year-old tree was 20 ft. tall with an 8-foot crown spread. Name changed to **VARIEGATA** in Wholesale List No. 17, Spring 1967-Fall 1967, p. 55. Scanlon "adopted" many Dutch trees and it is likely that his material was identical to the earlier-named cultivar.
- AURORA** (Royal Nurs. Alphons Van Der Bom, Oudenbosch, The Netherlands, Cat. Autumn 1977-Spring 1978, insert) — with bright yellow variegated foliage and pink autumn leaf color.
- AUTUMN GLOW** (C.E. Whitcomb, Know it and grow it, 1976 (Rev.), p. 85) — "consistent red to red-purple fall color, very showy." Apparently grown by Paul Goodwin (Nurs.) but never widely distributed.
- BURGUNDY** (Saratoga Horticultural Foundation, Saratoga, California, Wholesale Price List, June 1, 1963, p. 2) — leaves turn burgundy color in November and remain attractive through January (in Saratoga, California). Registered with the Arnold Arboretum (D. Wyman, *Arnoldia* 29: 1-8, 1969).
- BYRNE** — Name found in records of Plant Sciences Data Center of the American Horticultural Society. Plants propagated and tested under this name by the Saratoga Horticultural Society, Saratoga, California, but never described or commercially available.
- CORKY** (Kingsville Nurs., Kingsville, Maryland, Plant List sent only to Arboreta and Botanic Gardens, July 5, 1968, p.

- 15) — without description. Plants at several arboreta from this source, although the name is invalid because of lack of published description.
- FESTERI** (Hazelwood Bros. Pty. Ltd., Epping, New South Wales, Australia, Cat. 1947, p. 69) — holds rich autumn foliage right into mid-winter. Named for Mr. Fester, a gardener at Kenmore Hospital, Goulburn, New South Wales, who first recognized the value of this tree.
- FESTIVAL** (Saratoga Horticultural Foundation, Saratoga, California, Wholesale Price List, January 1, 1964) — narrow, upright, of rapid growth; a festival of light, bright shades. Tree discovered in yard of Mr. Paul Lee, Saratoga, California. Registered with the Arnold Arboretum (D. Wyman, *Arnoldia* 29: 1-8, 1969).
- FOLIIS AUREO-VARIEGATIS** (H. Jager and L. Beissner, *Die Ziergeholze*, Weimar, 1889, p. 202) — "yellow-flecked, not pretty." May = **VARIEGATA**.
- GOLD DUST** (Lake County Nurs. Exch., Cat. 1979, p. 37, and perhaps earlier catalogs) — as a common name for 'Aurea,' which probably is the same as **VARIEGATA**.
- GOLDEN TREASURE** (Duncan & Davies Nurs., New Plymouth, New Zealand, Cat. 1974, p. 37) — raised in Australia. The leaves are edged gold and in autumn change to cream and then white. The dark greens turn burgundy and the lighter greens orange to pink.
- GUM BALL** — Registered with the Arnold Arboretum (D. Wyman, *Arnoldia* 29: 1-8, 1969). A "bush-like, slow-growing form of sweetgum which is characterized by a proliferation of small erect stems which originate from a central root collar." Discovered by Hiram B. Stubblefield, Forest Nursery Co., McMinnville, Tennessee. Supposedly introduced in 1965, but earliest listing was in Wholesale Price List, 1970-71, p. 26.
- HAGEN** — Name found in records of Plant Sciences Data Center of the American Horticultural Society. Plants at Los Angeles State and County Arboretum, Arcadia, California obtained from Saratoga Horticultural Foundation, Saratoga, California in 1957. Apparently a selection by Hagen Nursery, San Marino, California and tested under this name. Cultivar name invalid because of lack of published description.
- KEITH DAVEY** — Name found in records of the Plant Sciences Data Center of the American Horticultural Society. Plant tested under this name by the Saratoga Horticultural Foundation, Saratoga, California; obtained from Davey Tree Expert Co., Kent, Ohio. Plant never described or commercially available.
- KENT** — Name found in records of the Plant Sciences Data Center of the American Horticultural Society. Plant tested under this name by the Saratoga Horticultural Foundation, Saratoga, California; obtained from Davey Tree Expert Co., Kent, Ohio. Some of these plants were erroneously marketed as 'Palo Alto' in 1960s. Cultivar never described or commercially available.
- KIA** (R.W. Boden, *Australian Parks* 4(3): 5-6, 1968) — tall, narrow spire-like tree with good red autumn coloring; selected in Australia. "Kia" is an aboriginal word meaning "spear."
- LANE ROBERTS** (Hillier's Manual of Trees and Shrubs, Winchester, England, 1972, p. 171) — autumn leaf color a rich black crimson-red, bark comparatively smooth.
- LEE** — Name found in records of the Plant Sciences Data Center of the American Horticultural Society. Plant tested under this name by Saratoga Horticultural Foundation, Saratoga, California. Named for man in whose yard (in Saratoga) tree was discovered; later named **FESTIVAL**.
- LEVIS** (C.J. Marchant, Keeper's Hills Nurs., Dorset, England, Cat. No. 4, ca. 1955, p. 57) — very hardy, with the branches and main stem devoid of cork.
- MIDWEST SUNSET** — Developed by Warren & Son Nurs., Oklahoma City, Oklahoma, and probably advertised (not in catalog) by them in the mid-1960s. Selected for good autumn color but proved inferior in tests in Texas and Illinois. Not currently available.
- MOONBEAM** (Duncan & Davies Nurs., New Plymouth, New Zealand, Cat. 1976, p. 43) — "spectacular buttery cream variegated form, each leaf varying."
- MORAINÉ** (The Siebenthaler Co., Dayton, Ohio, Cat. Spring-Summer 1982, p. 16) — hardy, outstanding fall color. Plant Patent No. 4601, October 14, 1980. Foliage "turning in autumn to a myriad of colors including a progression of color change throughout the tree." Hardy to -21 °F.
- OBTUSILOBA** (M. Dirr, *Manual of Woody Landscape Plants*, Ed. 3, 1983, p. 405) — leaves with rounded lobes, fall color apparently yellow; does not produce fruit. Only tree seen was on the campus of North Carolina State University at Raleigh. In view of the propagation and distribution of a rounded-lobed, fruitless tree in North Carolina, we believe this = **ROTUNDILOBA**.
- PALO ALTO** (Saratoga Horticultural Foundation, Saratoga, California, Wholesale Price List, February 1, 1961, p. 1) — also registered with the Arnold Arboretum (D. Wyman, *Arnoldia* 29: 1-8, 1969). Plant of pyramidal growth habit; with bright orange-red foliage in autumn.
- PENDULA** (A. Rehder, *Jour. Arn. Arb.* 20: 85-101, 1939) — as f. *pendula*, based on a single plant found near Hatton, Arkansas. The Arnold Arboretum was attempting to propagate this tree from root pieces.
- ROBERTS** = **LANE ROBERTS**
- ROTUNDILOBA** (A. Rehder, *Journ. Arn. Arb.* 12: 59-78, 1931) — as f. *rotundiloba*, based on a single specimen collected near Pinehurst, North Carolina; leaves with broad rounded, instead of pointed, lobes. Propagation to be attempted by the Arnold Arboretum. Apparently fruitless; more fully discussed in text. See also **OBTUSILOBA**.
- SOLEDAD** — Tree tested under this name by the Saratoga Horticultural Foundation, Saratoga, California, but later discarded; never available commercially.
- SUBEROSA** (F. Schwerin, *Mitt. Deutsch. Dendr. Ges.* 45: 390-391, 1933) — branches strongly corky to the tip.
- SUNNYVALE** — Name found in records of Plant Sciences Data Center of the American Horticultural Society. Plant selected in Sunnyvale, California, and tested by the Saratoga Horticultural Foundation, Saratoga, California. Never described or commercially available.
- TIRRIKI** (R.W. Boden, *Australian Parks*, 4(3): 5-6, 1968) — broad pyramidal growth with uniform red autumn coloring; selected in Australia. "Tirriki" is an aboriginal word meaning "flame of fire."
- VARIEGATA** (Overeynder, *Sieboldia* 6(35): 273, 1880) — with leaves speckled light yellow; no completely green leaves. G. Krussman, *Handbuch der Laubgehölze*, II, 1962, p. 62, stated that the leaves were marbled yellow and, although of little ornamental value, was grown in Holland. Probably the same cultivar grown as "Aureum" by E.H. Scanlon & Assoc., Olmsted Falls, Ohio, from 1962 to 1966.

There is also a 'Variegata' listed in Hilliers' Manual of

Trees and Shrubs, Winchester, England, 1971, p. 171, with "leaves attractively margined creamy-white, flushed rose in late summer and autumn." This name is invalid because in Latin form after January 1, 1959 and the plant is obviously not the same as the original **VARIEGATA**. A new name should be proposed for this Hillier cultivar.

**WORPLESDON** (George Jackman & Son, Woking Nurs. Ltd., Surrey, England, Planter's Handbook, No. 30, 1968-69, p. 41) — "selected by us for its rich autumn tints and beautiful finger-like foliage."

## LIRIODENDRON

### *Liriodendron tulipifera*

**ACUTIFOLIUM AUREUM** (A. Lavalley, Arb. Segrezianum, Paris, 1877, p. 9) — as "acutifolia aurea," without description.

**ACUTILOBUM** (A. Michaux, Flora Boreali - Americana, 1803, p. 326) — as var. *acutilobum*, from the wild; leaves with sharp-pointed lobes; not considered as a cultivar.

**ARDIS** (R. Hebb, Arnoldia 30: 251-260, 1970) — dwarf; "the original seedling and those budded from it are handsome miniatures of the species with ¼ to ½ the normal leaf diameter and tree height to date" (ca. 15 years). Named by J.C. McDaniel, University of Illinois, Urbana, to honor Mrs. W.F. Sonnemann, Vandalia, Illinois, who, with her husband, first selected the tree.

**ARGENTEO-VARIEGATUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as var. *fol. arg. varieg.*, with leaves variegated white.

**ARNOLD** — Name found in records of Plant Sciences Data Center of the American Horticultural Society. Plant under this name at Saratoga Horticultural Foundation, Saratoga, California. According to D. Wyman, Trees for American Gardens, Macmillan, 1965, p. 277, this = **FAS-TIGIATUM**.

**AUREO-MARGINATUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as var. *fol. aureo-marginatis*, leaves yellow-margined.

**AUREO-PICTUM** (W. Lauche, Deutsche Dendrologie, Berlin, 1880, p. 380) — as "foliis aureo-pictis," with yellow-flecked leaves.

**AUREO-VARIEGATUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as var. *fol. aur. varieg.*, with leaves variegated yellow.

**AUREUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as "aurea," with gold-yellow flowers.

**COMPACTUM** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, 1903, p. 101) — as "compacta," without description; but with reference to Behnsch (Nurs., in Brokau near Breslau, Germany), who, according to F. Schwerin, Mitt. Deutsch. Dendr. Ges. Nr. 28, 1919, p. 135-143, had this form in their 1892 catalog.

**CONTORTUM** (A. Lavalley, Arb. Segrezianum, Paris, 1877, p. 9) — as "contortum," without description. Described in Hilliers' Manual of Trees and Shrubs, Ed. 2, 1972, p. 172, as having somewhat contorted, undulating leaves.

**CRISPUM** (K. Koch, Dendrologie 1, 1869, p. 381) — with somewhat curled leaves.

**FASTIGIATUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as var. *fastigiatum*, with narrow crown.

**FLAVUM** (J.C. Loudon, Arboretum et Fruticetum Britannicum, vol. 1, 1838, p. 285) — as "flava," with yellow flowers, cultivated in France.

**HELTORF** (F.G. Meyer, Plant Explorations, ARS-34-32, 1963, p. 123) — lateral lobes of leaves 3-lobed; found near Dusseldorf, Germany by J.R.P. van Hoey Smith. Plants at Trompenberg Arboretum, Rotterdam, The Netherlands.

**HETEROPHYLLUM** (K. Koch, Dendrologie 1, 1869, p. 381) — a form with heterogeneous leaves, cultivated in France.

**INTEGRIFOLIUM** (J.C. Loudon, Arboretum et Fruticetum Britannicum, vol. 1, 1838, p. 285) — as "integrifolia," a cultivated tree equal to var. *obtusiloba* Michx., leaves with blunter lobes than the original species.

**LEUCANTHUM** (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 118) — as "leucantha," with white or nearly white flowers; plant obtained from J. Booth and Sons Nurs., Flottbeck, Germany.

**LUTEO-MARGINATUM** (L. Van Houtte (L.VH.), Flore des Serres, Vol. 18, 1869, p. 68) — as *Liriodendron tulipiferum* fol. *luteo-marginatis*, leaves with yellow margins. Illus. in Flore des Serres, Vol. 19, 1873, facing p. 163.

**LUTEUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as var. *fl. luteo*, with light yellow flowers.

**MEDIO-PICTUM** (A. Lavalley, Arb. Segrezianum, Paris, 1877, p. 9) — as *foliis medio-pictis*, without description.

**OBTUSILOBUM** (A. Michaux, Flora Boreali-Americana, 1803, p. 326) — as var. *obtusiloba*, from the wild; leaves with obtuse lobes; not considered as a cultivar.

**PYRAMID** (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 338) = **FASTIGIATUM**.

**PYRAMIDALIS** (A. Lavalley, Arb. Segrezianum, Paris, 1877, p. 9) — without description.

**RUBRUM** (H. Jager and L. Beissner, Die Ziergeholze, Weimar, 1889, p. 203) — as var. *fl. rubro*, with redder flowers.

**TORTUOSUM** (M. Dirr, Manual of Woody Landscape Plants, Ed. 3, 1983, p. 408) — "supposedly with contorted stems," according to the author. Cultivar name not seen in any other reference.

**VARIEGATUM** (A. Lavalley, Arb. Segrezianum, Paris, 1877, p. 9) — as "variegata," without description.

**WHOLELEAF** (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 338) = **INTEGRIFOLIUM**.

**YELLOW** (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 338) = **AUREO-MARGINATUM**.

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