

CHECKLISTS OF CULTIVARS OF LINDEN (*TILIA*) SPECIES

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Abstract. The difficulties of taxonomy in *Tilia* are many and varied. Cultivars of *Tilia* are described and discussed under the European species *T. cordata*, *T. platyphyllos*, and *T. tomentosa*, as well as the only United States species recognized, *T. americana*. The hybrids *T. × europaea* (*T. cordata* × *T. platyphyllos*) and *T. × flavescens* (*T. americana* × *T. cordata*) are also recognized as having valid cultivars. Several cultivars of doubtful hybrid origin are listed under the species they most resemble while some are grouped under "other hybrids."

Tilia is taxonomic torture.

Consider the species of eastern North America, north of Mexico, for which more than 100 "scientific" names have been propounded. A brief tour through some of the more significant works on American *Tilia* could begin with Asa Gray, who in 1887 (3) recognized 3 species in this region. John K. Small, in 1903 (10), described 8 species and later, Charles Sprague Sargent, in 1918, (9) distinguished 14 species and 14 varieties. In Alfred Rehder's "Manual" (6), 5 species were recognized and in his "Bibliography" (7) the number was 6. The 1968 monograph of Jones (5) once again brought the number down to 3 species. In all of the work cited above, the differences between species were based largely on leaf pubescence. The combination of biochemical and morphological analyses used by Hickok and Anway (4) allowed the recognition of only one species, *T. americana* L. We have, somewhat gratefully, followed this last concept, which we consider to be horticulturally sound. We have not, in this manuscript, made any judgements on botanical varieties of *T. americana*.

According to Jones' (5) "conservative" estimate, there are 30 species of *Tilia*. Four are native to North America, 6 are found in Europe, and the remainder occur in eastern Asia. It may be, that with increased knowledge of intraspecific variation patterns, this number may be reduced further.

How many species of *Tilia* are there in Europe? We recognize only 4: *T. cordata* Miller, *T. dasystyla* Steven, *T. platyphyllos* Scopoli, and *T. tomentosa* Moench (which includes *T. petiolaris* DC). The species named *T. europaea* L. (= *T. vulgaris* Hayne) is widely distributed throughout Europe, but is best considered as *T. × europaea* L., a natural hybrid between *T. cordata* and *T. platyphyllos*. No cultivars of *T. dasystyla* have been found.

The Asiatic species of *Tilia* are rare in cultivation in the West, and we have not been able to find any literature on selected cultivars.

Some idea of the nomenclatural problems encountered in *Tilia* may be obtained from a simple summary of the taxonomic *tour de force* of Wagner (11, 12). In an index of 389 binomials, that did not include names sunk in synonymy, he listed 108 new varietal names and 49 new hybrid epithets, nearly all dealing with European species. Thirty-six varieties were described for *T. cordata*, of which 20 were supposedly "in cultivation." This species or one or more of its varieties were named as parents in 35 hybrid combinations. The large-leaved European linden (*T. platyphyllos*) was also listed under *T. grandifolia* Ehrhart, *T. rubra* DC, and *T. pseudorubra* Schneider. This assemblage, which probably included some trees that we would consider as *T. × europaea*, was represented by 155 varieties (96 by Wagner), of which 51 were "cultivated," and by inclusion in the parentage of 50 hybrids. Most of the hybrid epithets were also erected by Wagner. Obviously, we have had to be extremely conservative in our approach to *Tilia*.

With regard to hybrids, Jones (5) stated "about five times as many named hybrids have been reported as there are species of *Tilia* on the whole globe, nearly all from Hungary." Most of these hybrids are spurious. There is no doubt that true interspecific hybrids can arise in nature and in cultivation, but they may not be as widespread as

suspected. Isolated trees of many species produce few viable seeds to self pollination. The presence of a tree of another somewhat compatible species in the vicinity may allow cross pollination to occur, resulting in a seed crop that may still show low germination, but a disproportionate number of hybrids.

Tilia europaea was named by Linnaeus, and it is a twist of fate that Linnaeus was "named" by a linden tree. As related by Jones (5), the father of Linnaeus, a pastor of peasant ancestry, in common with several of his relatives who had abandoned the farm life, changed his family name by "borrowing" from the common name for a tall linden (*T. X europaea*) that grew near his village. "Linden," or variations thereof, is the common name for *Tilia* species throughout most of Europe, and should be recognized as the "standard" common name for the genus. In American forestry practice, the name "basswood," corrupted from the "bast," or tough phloem fibers in the bark, is commonly used. In Great Britain, the word "lime," is merely another variation of lind or linden.

In all of the genera we have worked with in the past (8, and others), we have regarded the *species* as the "basic taxonomic unit," largely because of the ease of identification of the species and the fact that interspecific hybridization, especially in nature, was a rare occurrence. However, because of the apparent abundance of natural hybrids in *Tilia*, and the difficulties of taxonomic identification, the entire *genus* should be the "basic taxonomic unit" or "cultivar class." Thus, according to the Code (1), any cultivar name should be used only *once* within the genus. With the mandated usage of fancy, non-Latin cultivar names after January 1, 1959, this rule should be easily followed. However, it is often difficult to apply this rule to cultivar names used before 1959. In the listings below, the name 'Pendula,' has been used in 5 species, 'Fastigiata' and 'Pyramidalis' in 3 species each, and 'Aureo-variegata,' 'Blechiata,' 'Nova,' and 'Rubra' in each of 2 species. We have, somewhat cautiously, selected only one cultivar with each of these names as being valid, based on priority, description, and lack of doubt as to species assignation.

In the listings that follow, the cultivars are discussed under their respective species or

hybrid epithets in alphabetical order: *T. americana*, *T. cordata*, *T. X europaea*, *T X flavescens*, *T. platyphyllos*, and *T. tomentosa*. At the end, there is a brief list of "other hybrids," that could not be reasonably placed in any other category. As noted above, *T. X europaea* L. is a natural hybrid between *T. cordata* and *T. platyphyllos*. We have also singled out *T. X flavescens* A. Braun (*T. americana* X *T. cordata*) since several cultivars, chiefly of Canadian origin, of this putative parentage are in the American nursery trade. The cultivars 'Blechiata' and 'Moltkei,' of dubious *T. americana* X *T. tomentosa* ("petiolaris") parentage are listed under *T. americana*, the putative parent they most resemble. The supposed hybrid between *T. americana*, and *T. dasystyla* (*T. X euchlora* K. Koch — Crimean linden) has been grown as seedling stock in American and foreign nurseries, and some cultivars have been attributed to this hybrid. In Engler's monograph (2) the parentage of *T. X euchlora* was given as "*T. cordata* X *T. rubra* subsp. *caucasica* var. *obliquifolia* f. *dasystyla*," which may give some idea as to the complexity of identifying this taxon. Whatever the original *T. X euchlora* may have been, it is likely that some of the material now sold or grown under this name is far different. The cultivar 'Redmond,' once thought to be *T. X euchlora*, is treated under *T. americana*. Another cultivar of "euchlora" is listed with "other hybrids."

It is hoped that the following checklists will bring some order out of the chaos in *Tilia* and provide a more rational framework within which future cultivars may be placed. As in previous checklists, we have chosen, for emphasis, to give **VALID CULTIVAR** names in boldface capitals and **INVALID CULTIVAR** names in lightface capitals.

T. americana

AMPELOPHYLLA (V. Engler, Monographie der Gattung *Tilia* Breslau, 1909, p. 140) — as *f. ampelophylla*, with large leaves, irregularly toothed and lobed. We consider this well within the normal range of species variation. Listed as a cultivar by G. Krussmann, Handb. der Laubgehölze, 1960, p. 525, but probably never propagated and cultivated.

AUREO-VARIEGATA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 338) — without description, but with synonym *Tilia*

- americana argentea foliis aureis-variegatis* hort. There is a valid 'Aureo-Variegata' under *T. cordata* that has priority.
- BIGLEAF** (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 623) = LAXIFLORA, MACROPHYLLA, MISSISSIPPIENSIS.
- BLECHIANA** (L. Spath Nurs., Berlin, Cat. 1902-1903, p. 125) — as *alba* × *americana*? Suspected parentage changed in 1909-1910 Cat., p. 129 to (*americana* × *tomentosa*) on the basis of V. Engler's diagnosis in Monographie der Gattung *Tilia*, Breslau, 1909. As with 'Moltkei,' the correct parentage is nearly impossible to determine, and it may simply be a *T. americana* variant.
- CONTINENTAL APPEAL** (Wandell's Nurs., Urbana, Illinois, Advert. Amer. Nurseryman 144(6): 57, 1976, illus.) — vigorous growing linden with excellent dark green foliage and upright compact crown; not identified as to species. Plant Patent No. 3770, August 26, 1975. Has characteristics intermediate between *Tilia heterophylla* and *Tilia monticola* and later called *T. heterophylla monticola*. Considered a cultivar of *T. americana*.
- CONVEXIFOLIA** (G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 2, Vol. 3, 1978, p. 417) — as a weak-growing form with spoon-shaped leaves. Name invalid because in Latin form after 1959.
- DAKOTA** (L.C. Snyder, Trees and Shrubs for Northern Gardens, Univ. Minn. Press, 1980, p. 374) — round-headed tree, ideal form for street plantings. Developed by Ben Gilbertson, Kindred, North Dakota.
- DENSIFLORA** (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 159) — as *Tilia a. densiflora*, with compact cymes and umbonate fruits. Considered synonymous with *T. americana*.
- DENTATA** (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 160) — as *T. longifolia dentata* Hort., with coarsely and sharply serrate leaves with unequal teeth. A. Rehder (Jour. Arn. Arb. 20: 409-431, 1939) proposed this at the rank of *forma*, and it might be better considered at that level. Listed by G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 525 as a cultivar, but probably never propagated and cultivated.
- FASTIGIATA** (A.D. Slavin, Amer. Midl. Naturalist 12: 224-226, 1931) — as *T. glabra* f. *fastigiata*. Selected and propagated by B.H. Slavin, Rochester, N.Y. Narrow, pyramidal, upright form; 20-year-old tree 8.6 m. tall and 3 m. wide.
- GRAPELEAF** (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 623) = AMPELOPHYLLA, DENTATA.
- INCISO DENTATA** (V. Engler, Monographie der Gattung *Tilia*, Breslau, 1909, p. 139-140) — in synonymy of both *f. ampelophylla* and *f. megalodonta*, both of which are considered within the range of normal species variation.
- LAXIFLORA** (J.C. Loudon, Arboretum et Fruticetum Britannicum, Ed. 2, Vol. 1, 1844, p. 374) — as *T. a. laxiflora*, the loose-cymed-flowered American Lime Tree. Although plants bearing this name were then being grown in the garden of the London Horticultural Society, they were probably grown from seed and the described "variety" was well within the normal range of variation for the species.
- LAXIFLORA GIGANTEA** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 338) — without description, probably within the expected range of species variation.
- LONGIDENTATA** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 338) — as var. *longidentata*, equivalent to *T. longifolia dentata*. See DENTATA.
- MACROPHYLLA** (V. Engler, Monographie der Gattung *Tilia*, Breslau, 1909, p. 139) — as *f. macrophylla* (Bayer) V. Engl., with large, broad leaves; not considered outside the normal species variability. Listed by G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 525 as a cultivar, but probably never propagated and cultivated.
- MISSISSIPPIENSIS** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 338) — as var. *mississippiensis*, based on *T. mississippiensis* (sic) Bosc. Considered synonymous with *T. americana*.
- MOLTKEI** (L. Spath Nurs., Berlin, Cat. 1902-1903, p. 125) — as *americana* Moltkei (*alba* × *americana*?) L. Spath 1883/84, although it was not listed in their 1901-1902 Cat. Named for Fieldmarshall Count Moltke, and a tree was planted by Moltke in the nursery's arboretum in 1888. Putative parentage changed in 1909-1910 Cat., p. 130 to (*americana* × *tomentosa*) on the basis of V. Engler's diagnosis in Monographie der Gattung *Tilia*, Breslau, 1909. L. Dippel, Handbuch der Laubholzkräuter 3, 1893, p. 73 made this earlier determination of *alba* × *americana* parentage and since *T. alba* Mchx. = *T. heterophylla* Vent., and we consider *T. heterophylla* Vent. as part of *T. americana*, the plant could be simply a *T. americana* selection. At any rate, the parentage is uncertain at best, and 'Moltkei' resembled *T. americana* more than *T. tomentosa*, especially in susceptibility to leaf-eating insects.
- NEGLECTA** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 338) — as var. *neglecta*, without description, but with synonym *T. neglecta* Spach. Considered synonymous with *T. americana*.
- NOVA** (H.A. Hesse Nurs., Weener, Ostfriesland, West Germany, Cat. 1955/56, p. 146) — as *Tilia americana nova* hort. with synonym *T. megalod.* hort. holl. in later catalogs with further synonyms of *T. americana dentata* Rehd. and *T. americ. megalodonta* Engl. First placed unquestionably at cultivar level by H.J. Grootendorst, Dendroflora Nr. 7, p. 69-81, 1970. Pyramidal form with large leaves.
- OBLONGATA** (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 159) — as *T. a. oblongata* Hort., without description. Considered synonymous with *T. americana*.
- PENDULA** (Hillier's Manual of Trees and Shrubs, Ed. 4, 1974, p. 396, and earlier editions) — as an incorrect synonym for *T. petiolaris*; a mistake repeated frequently since 1838. Really a cultivar of *T. tomentosa*.
- PRESTIGE** (P.L.M. Van de Bom, Dendroflora Nr. 19, 1982, p. 45-82) — as a new name for **CONTINENTAL APPEAL**, but originator did not change name.
- PUBESCENS** (J.C. Loudon, Arboretum et Fruticetum Britannicum, Ed. 2, Vol. 1, 1844, p. 374) — as *T. a. pubescens*, the pubescent-leaved American Lime Tree. Although plants bearing this name were then in cultivation in several gardens, they were grown from seed and the described "variety" was well within the normal range of variation for the species.
- PUBESCENS LEPTOPHYLLA** (J.C. Loudon, Arboretum et

- Fruticetum Britannicum, Ed. 2, Vol. 1, 1844, p. 375) — as *T. a. pubescens leptophylla*, the thin-leaved pubescent American Lime Tree. Equivalent to the species.
- PYRAMIDAL** (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 623) = **FASTIGIATA**.
- PYRAMIDALIS** — Name found in records of Plant Sciences Data Center of the American Horticultural Society. Plant at University of Minnesota Landscape Arboretum, Chaska, Minnesota obtained from Bailey Nurs., St. Paul, Minnesota in 1973. Bailey Nurs. Wholesale List No. 1, 1974-75, p. 18 listed a Pyramidal American Linden (*Tilia americana fastigiata*) as a selection made at Bailey Nurs. If it were a Bailey selection, it could not be 'Fastigiata,' which originated in New York. 'Pyramidalis' would be invalid because in Latin form after 1959.
- REDMOND** — According to Plumfield Nurs., Fremont, Nebraska, Cat. 1960, p. 28, C.M. Redmond, a Fremont nurseryman, discovered this tree growing in his yard in the early 1920s. Plumfield Nurs. apparently propagated the cultivar in limited quantities beginning in 1927. The name first appeared in their 1942 Wholesale Trade List, p. 18 under *Tilia americana*, and described as a "hybrid" (author's italics). Listed as Crimean linden in 1943 Cat., p. 22 and in later catalogs of Plumfield's Garden Center under *Tilia euchlora*, Crimean Linden, which is supposed to be a hybrid between *T. cordata* and *T. dasystyla*. According to M.A. Dirr, Manual of Woody Landscape Plants, 1975, 'Redmond' was thought to be a hybrid between *T. × euchlora* and *T. americana*, although he thought it was basically *T. americana*. As of 1981, some major U.S. nurseries listed 'Redmond' under *T. americana* and others under *T. euchlora*. Best considered as a selection of *T. americana*.
- REDMONT** = **REDMOND**
- ROSENTHALII** (L. Dippel, Handbuch der Laubholzkunde 3, Berlin, 1893, p. 66) — with yellow-variegated leaves, probably arose in a Moscow nursery.
- RUBRA** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 338) — without description. This may have not been properly identified as to species, and the 'Rubra' cultivar of *T. platyphyllos* has priority.
- T. cordata***
- ARGENTEO-VARIEGATA** (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 340) — as *Tilia parvifolia argenteo-variegata* hort., without description.
- AUREO-VARIEGATA** (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 156) — as *Tilia ulmifolia foliis variegatis* Hort.; leaves with wide yellow-white border. Orthography changed by C.K. Schneider, Illus. Handbuch der Laubholzkunde, Vol. II, 1912, p. 373.
- BICENTENNIAL** (Handy Nurs., Portland, Oregon, Wholesale Price List, Fall 1976-Spring 1977, p. 28) — with tight pyramidal form and small typical foliage. See also XP-110.
- BOHLJE** (Joh. Bruns Nurs., Bad Zwischenahn, Germany, Cat. 1961-1962; p. 177) — as *T. parvifolia (T. cordata)* "Typ Bohlje," upright growing with broad pyramidal crown. Possibly originally selected at G.D. Bohlje Nurs., Oldenburg, Germany. Since the word "Typ" is not appropriate for inclusion in the cultivar name, we have made **BOHLJE** the valid name. Later re-namings of this cultivar as "Erecta" and "Select" are invalid.
- CHANCELLOR** (Cole Nurs. Co., Painesville, Ohio, Fall Trade List 1965, p. 48) — straight trunk, attractive dense foliage, and a compact, relatively narrow upright habit; very resistant to storm damage and drought. Plant Patent No. 2712, February 14, 1967.
- DE GROOT** (Sheridan Nurs. Ltd., Etobicoke, Ontario, Canada, Cat. 1973, p. 46) — sturdy, upright tree with compact head and dark green foliage; slower growing than most other lindens. Named for Constant De Groot, long-time propagator at Sheridan Nurs.
- ERECTA** (H.J. Grootendorst, Dendroflora Nr. 7, 1970, p. 69-81) — as a cultivar from Lorberg, Germany with 'Type Bohlje' and 'Select' as synonyms. We have not seen the name 'Erecta' in print before 1959, and it would therefore be invalid if published after that date because it is in Latin form. We believe the name **BOHLJE** has priority.
- FAIRVIEW** (A. McGill & Son Nurs., Fairview, Oregon, Wholesale Price List, Fall 1973-Spring 1974, p. 4) — strong, straight rapid growth; leaves dark green slightly larger than species; well-formed crown. Plant Patent No. 3259, August 22, 1972 by J.H. McIntyre, Gresham, Oregon.
- GLENLEVEN** (Sheridan Nurs. Ltd., Etobicoke, Ontario, Canada, Cat. 1963, p. 36) — fairly fast growing, with compact, almost pyramidal head. A selection of the "Sheridan Hybrids." Perhaps should be considered as a cultivar of *T. × flavescens*.
- GREEN GLOBE** (Sheridan Nurs. Ltd., Etobicoke, Ontario, Canada, Cat. 1983, p. 35) — with round compact head and dark green foliage. Propagated from a dwarf specimen by topgrafting.
- GREENSPIRE** (Princeton Nurs., Princeton, New Jersey, Fall 1961-Spring 1962, p. 78) — small leathery foliage, rapidly grows into a regular narrow-oval form, forms a perfectly straight trunk without staking and pruning. Plant Patent No. 2086, September 5, 1961.
- HANDSWORTH** (D. Wyman, Arnoldia 22: 69-76, 1962) — propagated at the Arnold Arboretum, Jamaica Plain, Massachusetts, from scions provided by the Royal Botanic Gardens, Kew, England in 1952. One-year-old twigs were light yellow green. Supposedly originated at Handsworth Nurs., Sheffield, England.
- JIMBO** — Name found in records of Plant Sciences Data Center of the American Horticultural Society. Plant at Royal Botanic Garden, Hamilton, Ontario, Canada, obtained from Girard Nurs., Geneva, Ohio in 1971. This = **PENDULA NANA** from that nursery.
- JUNE BRIDE** (Manbeck Nurs., New Knoxville, Ohio, Cat. Fall 1975, p. 30) — with straight central trunk and pyramidal form, abundant flowering in June. Plant Patent No. 3021, January 19, 1971.
- MORDEN** (D. Wyman, Arnoldia 29: 1-8, 1969) — selected for hardiness (lone survivor) at the Research Station, Morden, Manitoba, Canada from seedlings supplied by Sheridan Nurs. Ltd., Etobicoke, Ontario, Canada. With symmetrical, pyramidal crown. Registered with the Canadian Ornamental Plant Foundation, January 1, 1971.
- OLYMPIC** (J. Frank Schmidt & Son Co., Troutdale, Oregon, Wholesale Price List, Fall 1970-Spring 1971, p. 8) — without description. Described in Fall 1972-Spring 1973 List, p. 11, as being more symmetrical in growth and with better branching habit; leaves glossy.

PENDULA (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 157) — as *Tilia ulmifolia pendula* Hort., with weeping branches; and synonym *T. europaea pendula* Hort. Not certain as to species designation.

PENDULA NANA (Girard Nurs., Geneva, Ohio, Cat. 1976, p. 30) — dwarf, compact habit with pendant limbs. Name invalid because in Latin form after 1959.

PYRAMIDAL (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 623) = PYRAMIDALIS.

PYRAMIDALIS (W. Wittmack, Gartenfl. 45: 180, 1896) — as var. *pyramidalis*. The cultivar 'Pyramidalis,' under *T. platyphyllos*, has priority.

RANCHO (E.H. Scanlon & Assoc., Olmsted Falls, Ohio, Advert., Trees Mag. 23(4): 3, 1963, Trade-marked) — tight conical form, straight-stemmed growth, branches radiate about the trunk in whorls and gracefully arch upward. Plant Patent No. 2092, September 19, 1961.

SALEM (Handy Nurs. Co., Portland, Oregon, Wholesale Price List, Fall 1973-Spring 1974, p. 12) — vigorous grower with upright branching habit; becoming round-headed.

SELECT (Cole Nurs. Co., Painesville, Ohio, Trade List Fall 1964, p. 45) — as improved little-leaf linden, special budded strain. One of several selected clones that were tested at Cole Nurs. (of which 'Chancellor' was patented) and was considered good enough to designate with a name; but which was not propagated after all plants were sold. The Cole Nursery 'Select' cannot be placed in the synonymy of 'Bohlje' or 'Erecta.' However, there was a 'Select' listed in F.J. Grootendorst & Sons Nurs. Boskoop, Holland, Wholesale Price List, Fall-Spring, 1968-1969, p. 28, as very hardy, with brown branches. Grootendorst later (Dendroflora Nr. 7, 1970, p. 69-81) sunk his 'Select' in the synonymy of 'Erecta,' but both names are invalid. See 'Bohlje.'

SHERIDAN HYBRIDS (Sheridan Nurs. Ltd., Etobicoke, Ontario, Canada, Cat. 1964, p. 33) — listed under *Tilia cordata*, and implying that several trees were involved, all of which had dense crowns, dark green foliage, and straight stems. Selected from seedlings grown from *T. cordata* trees that had been subject to cross pollination from *T. americana*. Of this group, 'Glenleven' has been named. Perhaps should be considered under hybrid epithet *T. × flavescens*.

STEWART (S.H. Davis and J.L. Peterson, J. Arboric. 6: 258-260, 1980) — without description, in an article on trunk decay. A selection was propagated under the name "Stewart" by Princeton Nurs., Princeton, New Jersey, but was never described or advertised for sale, and the name must be considered invalid.

SWEDISH UPRIGHT (D. Wyman, Arnoldia 23: 111-118, 1963) — found by Alfred Rehder in Sweden in about 1906 and propagated at the Arnold Arboretum, Jamaica Plain, Massachusetts. Tight pyramidal form, with lateral branches at right angles to the trunk, with lower branches pendulous.

TURESI (Matt Tures Sons Nurs., Roselle, Illinois, Wholesale Price List, Fall 1968-Spring 1969, p. 11) — without description. Name invalid because of lack of description and because it is in Latin form after 1959.

TYP BOHLJE = BOHLJE.

XP 110 (E.H. Scanlon and Assoc., Olmsted Falls, Ohio, Wholesale List No. 15, Fall 1963-Spring 1964, p. 82) with narrow, conical tree form, acute branch angles. = BICENTENNIAL.

T. × europaea *T. cordata × T. platyphyllos*

BICUSPIDATA (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 157) — as *T. vulgaris bicuspidata*, with bicuspidate leaves; obtained from a nursery.

KAISERLINDE — a common name for **PALLIDA** in Germany.
KONINGSLINDE — a common name for **PALLIDA** in The Netherlands.

LONGIVIRENS (J. Timm & Co., Nurs., Elmshorn, West Germany, Cat. Fall 1949-Spring 1950, p. 42) — with oval crown, light green leaves, and greenish-yellow young branches. Cultivar had been tested for 20 years before 1949.

PALELEAF (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 623) = **PALLIDA**.

PALLIDA — According to G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 527, this is an old selection based on *T. pallida* Simonkai. Twigs and buds strikingly red in autumn; leaves large, green above and yellowish green or bluish green below.

PENDULA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 340) — as *T. vulgaris pendula* hort., without description. G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 527 stated that the branches are pendulous. There is a valid 'Pendula' in *T. tomentosa* that has priority.

WEEPING (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 623) = PENDULA.

WRATISLAVIENSIS (G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 527) — as a cultivar of *T. × europaea*, based on *T. grandifolia* var. *wratislaviensis* (L. Beissner, Mitt. Deutsch. Dendr. Ges. 13: 323, 1904). New shoots and young leaves yellow; found in 1898 in Breslau, Poland.

ZWARTE LINDE — Name used as a cultivar designation by H.J. Grootendorst, Dendroflora Nr. 7, 1970, p. 69-81, and earlier references, to denote a particular selection that had been long propagated in The Netherlands. Vigorous tree with nearly horizontal, very dark colored branches; very susceptible to aphid attack. The use of the common name for linden ("Linde") as part of a cultivar name is not recommended and "Zwarte" (dark) alone would be misleading. A new and valid name is needed for this cultivar.

T. × flavescens *T. americana × T. cordata*

DROPMORE (Skinner's Nursery, Ltd., Dropmore, Manitoba, Canada, Dropmore Hardy Plants For 1956, p. 19) — a hybrid between *T. cordata* and *T. americana*; upright, fast growing tree with large leaves that are immune to the mite that disfigures the native basswood.

GLENLEVEN — Probably hybrid of *T. cordata* × *T. americana*, described under *T. cordata*.

SHERIDAN HYBRIDS — Probably hybrids of *T. cordata* × *T. americana*; discussed under *T. cordata*.

SPAETHII (L. Spath Nurs., Berlin, Cat. 1912-1913, p. 134) — seedling origin at Spath Nurs. and considered to be a

hybrid between *T. americana* and *T. cordata*; fast growing, upright branches; dense rounded crown. The cultivar name should be spelled as above, without the umlaut over the "a" in *Spath*, as used in the nursery name. The spelling with the "e" was deliberate and should be retained.

WASCANA (Canad. Hort. Council, Rpt. Comm. Hort. Res., 1982, p. 147) — an open-pollinated seedling of 'Dropmore,' selected in 1978 by W.G. Ronald, Morden Research Station, Morden, Manitoba, Canada. Hardier and faster growing than 'Dropmore' with wider branching habit. Registered with the U.S. National Arboretum in 1983 and will be published in an article by T.R. Dudley.

T. platyphyllos

ALBO-MARGINATA (L. Beissner, E. Schelle, and H. Zabel, *Handbuch der Laubholz-Benennung*, Berlin, 1903, p. 339) — without description, as *Tilia grandifolia albo-marginata* van Houtte, implying that it was first cultivated in the nursery of L. van Houtte, Gand, Belgium.

ASPLENIIFOLIA (E. Petzold and G. Kirchner, *Arboretum Muscaviense*, Gotha, 1864, p. 154-155) — as *T. platyphyllos asplenifolia* Hort.; probably equivalent to **LACINIATA**.

ASPLENIFOLIA NOVA (Baumann Bros. Nurs., Bollwyller, France, Cat. 1838) — without description. Catalog listing reproduced in J.C. Loudon, *Arboretum et Fruticetum Britannicum*, London, Ed. 2, Vol. 4, 1844, p. 2635-2645. Considered by Loudon (i.c., Vol. 1) as another cut-leaved selection of *T. platyphyllos*.

AURANTIA (Royal Botanic Gardens, Kew Hand-List of Trees and Shrubs, Ed. 1, Pt. 1, 1894, p. 47) — without description; probably = **AUREA**.

AUREA (J.C. Loudon, *Arboretum et Fruticetum Britannicum*, London, Ed. 2, Vol. 2, 1844, p. 366) — as *T. europea platyphylla aurea*, with yellow twigs; available in London nurseries.

AUREA NOVA (L. Beissner, E. Schelle, and H. Zabel, *Handbuch der Laubholz-Benennung*, Berlin, 1903, p. 339) — as *Tilia grandifolia aurea nova* hort. Masek., without description, but probably distinct from 'Aurea.'

BLECHIANA (Royal Botanic Gardens, Kew Hand-List of Trees and Shrubs, Ed. 1, Pt. 1, 1894, p. 47) — as *T. platyphyllos* var. *blechiana* Hort., without description. There may have been some confusion with the cultivar 'Blechiana' that we list under *T. americana*, and which has priority.

COMPACTA (B.K. Boom, *Nederl. Dendr. Ver. Jaarb.* 20: 37-120, 1954-55) — as a cultivar; earlier described by Boom as variety of *T. platyphyllos*. A compact dwarf form only 2 m. tall at 30 years of age.

CORALLINA — Name first used to describe red-twigged variants occurring in the wild. W.J. Bean, *Trees and Shrubs Hardy in the British Isles*, Ed. 8, Vol. 4, 1980, considered the cultivated selection the same as **RUBRA**.

CORYLIFOLIA (L. Beissner, E. Schelle, and H. Zabel, *Handbuch der Laubholz-Benennung*, Berlin, 1903, p. 339) — as *Tilia grandifolia corylifolia* hort., but not considered cultivated by C. Schneider, *Illus. Handbuch der Laubholzkunde*, Vol. 2, 1912, p. 378-379.

CUTLEAF (H.P. Kelsey and W.A. Dayton, *Standardized Plant Names*, 1942, p. 624) = 'Asplenifolia,' 'Filicifolia,' or

'Laciniata.'

DELFT — the cultivar name first appeared and the plant described in the Dutch magazine *Groen*, 1965, p. 4. The tree was selected in 1956 from a city planting in Delft, The Netherlands, and propagated by the Royal Nurseries Alphons Van Den Boom, Oudenbosch. The first trees were sold in 1965, but many had been distributed for testing before that time. Tree has a spire-shaped crown and holds its green leaves much longer than other cultivars.

DIMOND — Registered with the U.S. National Arboretum in 1982. Plant with dwarf growth habit, being only 1.1 m. tall at 12 years of age. Discovered in nursery in Moylinny, Muckamore, County Antrim, Northern Ireland by P.W.J. Dimond. To be published in an article by T.R. Dudley.

FASTIGIATA — A. Rehder, *Manual of Cultivated Trees and Shrubs*, Macmillan, Ed. 2, 1940, p. 623 erected this name as a *forma* based on *Tilia grandifolia pyramidalis* hort., and described it as having a narrow pyramidal habit. W.J. Bean, *Trees and Shrubs Hardy in the British Isles*, Ed. 8, Vol. 4, 1980, p. 608 used the name as a cultivar designation for a plant with steeply ascending branches, but based on Rehder's *forma*. Fastigate plants are not necessarily pyramidal, and we consider the nomenclatural transfers improper and **PYRAMIDALIS** to be the correct cultivar name. If any truly fastigate plants are propagated for cultivation, they should be given new cultivar names.

FILICIFOLIA NOVA (W.J. Bean, *Trees and Shrubs Hardy in the British Isles*, Ed. 7, Vol. 3, 1951) — as var. *filicifolia nova*, but considered a cultivar in Ed. 8, Vol. 4, 1980, p. 608. Leaves narrow-triangular, often irregularly lobed, but not as deeply as 'Laciniata' or *Asplenifolia*.

FLACCIDA (E. Petzold and G. Kirchner, *Arboretum Muscaviense*, Gotha, 1864, p. 155) — with flaccid leaves, as *T. platyphylla flaccida* hort.; received from a nursery as *T. europea flaccida*.

GOLDTWIG (H.P. Kelsey and W.A. Dayton, *Standardized Plant Names*, 1942, p. 624) = **AURANTIA** or **AUREA**.

HOFFMANNIANA (C. Schneider, *Illus. Handbuch der Laubholzkunde*, Vol. 2, 1912, p. 379) — as var. *Hoffmanniana*, with small leaves, known in cultivation.

LACINIATA (J.C. Loudon, *Arboretum et Fruticetum Britannicum*, London, Ed. 2, Vol. 1, 1844, p. 366) — as *T. europea laciniata*, with synonym *T. platyphylla laciniata* Hort. Leaves deeply and irregularly cut and twisted.

LATIFOLIA (L. Beissner, E. Schelle, and H. Zabel, *Handbuch der Laubholz-Benennung*, Berlin, 1903, p. 339) — as *Tilia grandifolia latifolia* hort., without description.

MOYLINNY — Registered with the U.S. National Arboretum in 1982. Plant with dwarf growth habit, being 1.4 m. tall at 12 years of age. Discovered in nursery in Moylinny, Muckamore, County Antrim, Northern Ireland by P.W.J. Dimond. To be published in an article by T.R. Dudley.

MULTIBRACTEATA (L. Beissner, E. Schelle, and H. Zabel, *Handbuch der Laubholz-Benennung*, Berlin, 1903, p. 339) — as *Tilia grandifolia multibracteata* A. Braun, without description and with synonym *Tilia platyphyllos flore pleno* hort. Not considered as propagated and cultivated by C. Schneider, *Illus. Handbuch der Laubholzkunde*, Vol. 2, 1912, p. 376.

OBLIQUA (Royal Botanic Gardens, Kew Hand-List of Trees and Shrubs, Ed. 1, Pt. 1, 1894, p. 47) — *T. platyphyllos* var. *obliqua*, without description. W.J. Bean, *Trees and Shrubs Hardy in the British Isles*, Ed. 8, Vol. 4, 1980, p.

608, considers that this may be a cultivar. Leaves obliquely truncate at base, glabrous beneath.

OREBRO (W.F. Koppeschaar, Jr., Nederl. Dendr. Ver. Jaarb. 14: 72-74, 1939) — fastigiate growth habit; found in a park in Orebro, Sweden and propagated by K.A. Lundstrom Nurs., in Ostansjo, Sweden.

PAUL KRUGER (L.A. Springer, Nederl. Dendrol. Veren. 9: 179-181, 1933) — found and named at the municipal nursery of the city of Arnhem, The Netherlands. Judged to be representative of *T. grandifolia* var. *pseudoturbinata* Wagner. Described in Cat. 1959-1960 of Royal Nurseries Alphons Van Den Boom, Oudenbosch, The Netherlands, as having broad leaves, densely pubescent underneath, persisting until late in the season.

PENDULA (Hillier's Manual of Trees and Shrubs, Ed. 2, 1972, p. 396) — with spreading branches and pendulous branchlets. Name invalid because in Latin form after 1959.

PLURIFOLIA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia pluriflora* hort., without description.

PSEUDOTURBINATA (Royal Nurseries Alphons Van Den Boom, Oudenbosch, The Netherlands, Cat. 1959-1960) — 'Pseudoturbinata' = 'Paul Kruger Linde'; = **PAUL KRUGER**.

PUBESCENS (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia pubescens* hort., without description.

PYRAMIDAL (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 624) = **FASTIGIATA** or **PYRAMIDALIS**.

PYRAMIDALIS (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 155) — of pyramidal growth habit.

PYRAMIDALIS AUREA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia pyramidalis aurea*, without description.

PYRAMIDALIS OBLIQUA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia pyramidalis obliqua*, without description.

REDTWIG (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 624) = **CORALLINA** or **RUBRA**.

RUBRA (R. Weston, Universal Botanist and Nurseryman, Vol. 1, London, 1770, p. 298) — as *Tilia europea rubra*, the red-twigged lime-tree. J.C. Loudon, Arboretum et Fruticetum Britannicum, Ed. 2, Vol. 1, 1844, p. 365-366, considered this as only a naturally-occurring variation, not purposely cultivated. According to W.J. Bean, Trees and Shrubs Hardy in the British Isles, Ed. 8, Vol. 4, 1980, the presently cultivated plants are propagated by grafting or layering and may represent an old nursery clone of unknown origin.

SERRATIFOLIA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia serratifolia*, without description.

SPECIOSA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia speciosa*, without description.

SULPHUREA (J.F. Cowell in L.H. Bailey, Cycl. Amer. Hort. 1902, Vol. 4, p. 1809) — probably the same as **AUREA**.

TORTUOSA (W.J. Bean, Trees and Shrubs Hardy in the British Isles, Ed. 7, Vol. 3, 1951, p. 430) — with young branches curiously curled and twisted, often forming

loops, first shown at a meeting of the Royal Horticultural Society in 1888. Propagated at the Royal Botanic Gardens, Kew.

VARIEGATA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 339) — as *Tilia grandifolia variegata*, without description.

VINELEAF (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 624) = **VITIFOLIA**.

VITIFOLIA (Royal Botanic Gardens, Kew Hand-List of Trees and Shrubs, Ed. 1, Pt. 1, 1894, p. 47) — as *T. platyphyllos* var. *vitifolia*, without description. Leaves obscurely 3-lobed. May be a cultivar, according to W.J. Bean, Trees and Shrubs Hardy in the British Isles, Ed. 8, Vol. 4, 1980, p. 608-609.

T. tomentosa

AUREO-VARIEGATA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — without description. There is a valid 'Aureo-Variegata' under *T. cordata* that has priority.

BRABANT (H.J. Grootendorst, Dendroflora Nr. 7, 1970, p. 69-81) — large tree with dense, broad, conical crown; grows in almost every type of soil.

CALVESCENS (J. Timm Nurs., Elmshorn, Germany, Cat. Fall 1937-Spring 1938, p. 57) — with light green leaves, tips of branches whitish.

CANESCENS (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — without description.

ERECTA (H.A. Hesse Nurs., Weener, West Germany, Cat. 1958/59, p. 208) — with upright single trunk.

FASTIGIATA (M.A. Dirr, Manual of Woody Landscape Plants, Ed. 3, 1983, p. 705) — "an upright clone, not too different from the species, especially with age." May = **ERECTA**.

FRUCTA OBLONGA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — as *fructu oblongo* hort., without description.

HORIZONTALIS (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — without description.

KOOLWIJK (H.J. Grootendorst, Dendroflora Nr. 7, 1970, p. 69-81) = **VAN KOOLWIJK**.

NOVA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — without description. There is a validly published and described cultivar 'Nova' in *T. americana*.

ORBICULARIS — According to W.J. Bean, Trees and Shrubs Hardy in the British Isles, Ed. 8, Vol. 4, 1980, p. 606-607, this cultivar originated in the nursery of Simon-Louis Freres, near Metz, France about 1868. The seed parent was probably *T. tomentosa* 'Pendula' (= "Petiolaris") and the male parent may have been *T. × euchlora*. Branches more pendulous than 'Pendula'; tree with a more conical crown.

PARMENTIERI (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — as *T. alba Parmentieri* hort., without description.

PENDULA (E. Petzold and G. Kirchner, Arboretum Muscaviense, Gotha, 1864, p. 162) — as *T. tomentosa pendula* Hort., with synonym *T. tomentosa petiolaris*. According to W.J. Bean, Trees and Shrubs Hardy in the

British Isles, Ed. 8, Vol. 4, 1980, p. 605-606, the tree had been received in Moscow perhaps from Booth Nurs. in Germany, under the erroneous name *T. americana pendula*. Petzold and Kirchner, in re-identifying this tree, confused it with *T. petiolaris* DC. De Candolle (Prodr. 1, 1824, p. 514) originally described a specimen from a tree with longer-stalked leaves, in the Botanic Garden at Odessa. Since that time, the present tree of pendulous habit has been mistakenly listed under the name *T. petiolaris*. To avoid confusion with the plant described by De Candolle, this tree is best considered as the cultivar **PENDULA** belonging to *T. tomentosa*.

PENDULA VARIEGATA (L. Beissner, E. Schelle, and H. Zabel, Handbuch der Laubholz-Benennung, Berlin, 1903, p. 337) — without description, and with *Tilia alba pendula foliis variegatis* hort. as a synonym.

PETIOLARIS (J.C. Loudon, Arboretum et Fruticetum Britannicum, London, 1838, Ed. 1, Vol. 1, p. 373) — as the long-petioled-leaved Lime tree, a variety of *T. alba*. Based on *T. petiolaris* DC. Neither Loudon nor De Candolle ever mentioned that the tree had pendulous branches, but somehow the name "Petiolaris" has come to be associated with such a cultivar. See **PENDULA**.

PRINCETON (P. Berrang and D.F. Karnosky, Street Trees for Metropolitan New York, Publ. No. 1, N.Y. Bot. Gard. Inst. Urban Hort., 1983, p. 149) — oval form. Selected and propagated by Princeton Nurs., Princeton, New Jersey, but never described, advertised, or offered for public sale by developer. Perhaps should not be considered a valid name without originator's permission.

PYRAMIDALIS (J.F. Cowell in L.H. Bailey, Cycl. Amer. Hort., 1902, Vol. 4, p. 1808) — as *T. alba* var. *pyramidalis* Hort., sunk in synonymy with the species.

RHODOPETALA (V. Gabor (or G. Varga?), Deutsche Baumschule 16: 303, 1965) — from Hungary. Flowers reddish-violet at tips, fading to yellowish at the base. Based on *T. tomentosa* var. *inequalis* f. *rhodopetala* Borbas.

SZELESTE (Ton van den Oever Nurs., Antwerp, Belgium, Computerized Cat. 1982-83) — without description.

VAN KOOLWIJK (P. Lombarts Nurs., Zundert, The Netherlands, Cat. 1940-41, p. 47) — as *T. americana*, but changed in Cat. 1956-57, p. 86 to *T. tomentosa*. Slow-growing with compact pyramidal crown. Selected in 1935 from a nursery row and named for C.M. van Koolwijk. See also B.K. Boom, Nederl. Dendr. Ver. Jaarb. 21: 85-178, 1956-58.

narrow, upright habit; leaves large, of variable form, similar to *T. platyphyllos* 'Laciniata.'

MRS. STENSSON Registered with the Arnold Arboretum (D. Wyman, Arnoldia 26: 13-16, 1966). A probable hybrid of *T. platyphyllos* × *T. tomentosa* that originated in Poland about 1905. Tree with broad pyramidal habit; branches a dark raspberry; leaves tomentose on both sides in spring. Named for Mrs. J. Stensson, Oakville, Ontario, Canada. To be distributed by Woodland Nurs., Cooksville, Ontario, Canada. Listed under *T. × varsarvicensis* Kobenzda by G. Krussman, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 530.

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OTHER HYBRIDS

AUREA (Girard Nurs., Geneva, Ohio, Cat. 1976, p. 30) — as *Tilia aurea* (Golden Linden), with growing habit similar to *euchlora* but with golden leaves — very rare. Doubtful as to species or hybrid identification.

DIVERSIFOLIA (G. Krussmann, Handbuch der Laubgehölze, Berlin, Ed. 1, Vol. 2, 1962, p. 527) — listed under *T. × flaccida* Host. (*T. americana* × *T. platyphyllos*); tree of

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