CHECKLIST OF CULTIVARS OF HONEYLOCUST (*GLEDITSIA TRIACANTHOS* L.)

by Frank S. Santamour, Jr. and Alice Jacot McArdle

Of all the 14 or so species in the genus *Gleditsia* (3), only the eastern American *G. triacanthos* L. deserves the common name "honeylocust". The "honey" in the name denotes the sometimes high sugar content of the pulp in the pods of some trees, especially in the more southern parts of the species' range. And, even though honeylocust has recently found great favor as a landscape tree, the first cultivars selected in America were for the potential use of their pods as cattle food (9).

The genus *Gleditsia* was named for the German botanist Johann Gottlieb Gleditsch, and many Europeans still spell the name as *"Gleditschia."* There is not much doubt that the valid scientific name for honeylocust was given by Linnaeus, but there is some controversy whether the thornless *(inermis)* trees constitute a botanical variety *(var.)* or a forma *(f.)* and who is the proper authority for the name. The most recent monograph (5) accepted the *forma* status and used Schneider as the authority, even though Isley has annotated all *inermis* specimens in the herbarium of the U.S. National Arboretum with "Provolone" as the authority. Rehder (7) considered *inermis* trees as a variety under the authority of Willdenow, but later (8) listed them as *G. triacanthos* f. *inermis* (L.) Zabel at the rank of *forma.*

In our opinion, there is some question whether thornless *(inermis)* trees should be given any particular botanical rank. It is true that thornlessness is a sexually inherited characteristic (4). Some botanists consider that true varieties must occupy a particular natural range, but thornless trees are scattered throughout the range of the species. Thornless trees may also be vegetatively propagated from thornless branches of genetically "thorny" parent trees, and retain the thornless characteristic essentially for the life of the propagated tree (2,6), even being used as a source of budwood for other generations of thornless propagations. Thus, virtually any tree, regardless of its genetic constitution, can be produced in thornless or *inermis* phenotypes. It is doubtful that any botanical rank presently exists that will adequately cover this situation. We would suggest that nurserymen, arborists, and horticulturists continue to use "thornless", *"inermis",* or "unarmed" — preferably "thornless" — as a significant descriptor of selected cultivars without regard to botanical rank. We would also suggest the uniform usage of "honeylocust" as a single word.

The Arnold Arboretum of Harvard University is the recognized International Registration Authority for *Gleditsia* cultivars and, in 1961, published the first checklist for the genus (10). That checklist contained 30 cultivar names, 24 of them for honeylocust. We have been given permission by the Arnold Arboretum to prepare a revised and updated checklist for *G. triacanthos.* Of the 24 names previously listed, we have rejected 3, found earlier references for 3, and provided citations other than patents for 6. Plant patents before 1982 do not contain the cultivar names. In addition, we found 23 names published before 1961 and 23 names pulished since 1961.

Even though, in normal practice, cultivar names are enclosed in single quotes or preceded by the abbreviation "cv.", according to the Code (1), we have chosen, for emphasis, to denote **VALID CULTIVAR** names in boldface capitals and INVALID CULTIVAR names in lightface capitals.

ARROWHEAD (Umapine Oregon Nurs., Milton-Freewater, Oregon, Wholesale Trade List, Fall 1981-Spring 1982, p. 9 — and perhaps in earlier catalogs) — this name should be considered as a commercial synonym for **SKYLINE.**

BEATRICE (Inter-State Nurs., Hamburg, Iowa, Cat. Spring 1955, p. 34) - "shaped very much like the American elm, wide spreading at the top"; thornless and usually fruitless. Original tree was a 50-year-old specimen in Beatrice, Nebraska.

BESSEMER (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. This is a very thorny tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-

Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Origin unknown.

BILLINGS — Name found in the records of the Plant Sciences Data Center of the American Horticultural Society. Plants at the University of Minnesota Landscape Arboretum, Chaska, Minnesota obtained in 1962 from Elmore Nurs., Elmore, Minnesota. Name invalid because of lack of published description.

BROWN (D.H. Scanlon III, *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31) — a pistillate clone used in 1938-39 by researchers at the Tennessee valley Authority to study controlled pollination techniques. Tree apparently no longer living.

BROWNII (Amer. Assoc. Nurserymen, 1963, Plant patents with common names, 1931-1962, p. 32) - 'Browni', without description. We have changed the name ending to proper orthography. Plant Patent No. 1514, September 11, 1956 by William L. Flemer III, Princeton Nurs., Princeton, New Jersey, but never offered for sale by any nursery. Plant slow-growing with straight trunk and branches and without drooping branches. Name considered valid even though in Latin form after January 1, 1959 because the plant was patented before that date.

BUJOT (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 275) = **BUJOTII.**

BUJOTII (J. Neumann, Rev. Horticole, ser. 2,4: 205-206, 1845-1846) - weeping habit, named for M. Bujot, the French nurseryman who discovered the plant.

BUJOTTI PENDULA (A. Rehder in L.H. Bailey, Cycl. Amer. Hort. 2: 650, 1900) = **BUJOTII.**

BUSHY (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 275) = **ELEGANTISSIMA.**

CALHOUN (Sunny Ridge Nurs., Swarthmore, Pennsylvania, News Bulletin and Price List, Spring - 1941, p. 4) — without description. According to S.B. Chase, J. Forestry 45: 715-722, 1947, the original tree was a thorny, 15-inch tree found growing in the woods near Gadsden, Alabama. Pods from this tree contained 36 percent sugar on a dry weight basis. Cultivar named for the property owner, L.H. Calhoun. According to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31, this tree won 1st prize in a contest (*ca.* 1934) sponsored by the Tennessee Valley Authority.

CLUSTER (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. Produces a large number of pods per cluster according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Villa Rica, Georgia.

COLUMNARIS (F. Schwerin, Mitt. Deutsch. Dendr. Ges. 22: 322, 1913) — described from an old tree of beautiful columnar form growing in a park in Lowen, Belgium.

CONTINENTAL (Princeton Nurs., Princeton, New Jersey, Wholesale Price List Fall 1973 - Spring 1974, p. 36) — vigorous, with a narrow crown of stout branches; thornless and virtually seedless. Plant Patent No. 1752, September 16, 1958.

DIDEN (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. Pods have excellent flavor according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. This is probably the tree that won 4th prize in a contest sponsored by the Journal of Heredity (19: 216-224, 1928); entered by Miss A.C. Diden, Glen Mary, Tennessee. Pods had a high sugar content (29.5 percent), but a rather puckery flavor.

DWARF (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 275) = **NANA.**

ELEGANTISSIMA (C. Grosdemange, Rev. Horticole, n. ser. 5: 512-514, 1905, illus.) - leaflets smaller than normal, plant of dense, bushy habit; about 4 meters tall at 25 years of age.

EMERALD LACE (A. McGill & Son, Fairview, Oregon, Wholesale Price List, Fall 1973-Spring 1974, p. 2) — rapid growing, with unusual foliage of twisted ruffled appearance produced at an acute angle to the stem, branch angle less than 90 degrees. Plant Patent No. 3260, August 22, 1972, by John McIntyre, Gresham, Oregon.

EXCELSA PENDULA (C. de Vos, Handb. Boom. Heest, Ed. 2, 1887, p. 486) = **BUJOTII** according to B.L. Wagenknecht, Arnoldia 21: 31-34, 1961.

FAIRVIEW (A. McGill & Son, Fairview, Oregon, Wholesale Price List Fall 1975-Spring 1976, p. 9) — strong sturdy habit of growth, form similar to 'Moraine' except much stronger.

GADSDEN (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. This is a staminate tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from same area as 'Calhoun' in Gadsden, Alabama.

GOLDEN (Surface Nurs., Gresham, Oregon, Wholesale Price List, Fall 1982-Spring 1983, p. 9; and perhaps in earlier catalogs) — this name should be considered as a commercial synonym for **SUNBURST.**

GOLDENHALO (Umapine Oregon Nurs., Milton-Freewater, Oregon, Wholesale Trade List, Fall 1981-Spring 1982; p. 9; — and perhaps in earlier catalogs) — this name should be considered as a commercial synonym for **SUNBURST.**

GOLDEN WEST (Powell Valley Nurs., Gresham, Oregon, Wholesale Price List 1982-1983, p. 11, and perhaps in earlier catalogs) — this name should be considered as a commercial synonym for **SUNBURST.**

GOLDWORTH (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. The pods are very thick (3/8 inch)

according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. This is probably the tree that won 1st prize in a contest sponsored by the Journal of Heredity (19: 216-224, 1928); entered by Miss Ellen Williams, Goldworth Farm, Villa Rica, Georgia. Pods had a high sugar content (29.7 percent) and excellent flavor.

GREEN ARBOR (Handy Nurs. Co., Portland, Oregon, Wholesale Price List, 1971, p. 9) — large, heavy leaves, thornless and seedless, crown becoming fairly dense and oval.

GREEN GLORY (Ralph Synnestvedt & Assoc., Burr Oak Nurs., Glenview, Illinois, Wholesale Price List, Spring 1964, p. 7) — without description. Described in Spring 1965 List (p. 7) as tree with central leader, heavy foliage, lasting late in the season. Plant Patent No. 2786, January 9, 1968.

HALKA (J. Frank Schmidt & Son Co., Boring, Oregon, Wholesale Cat. Fall 1976-Spring 1977, p. 11) — rapid growth in caliper during early years, with horizontal branching, and full round-headed crown. Discovered and patented by Chester J. Halka, Englishtown, New Jersey. Plant Patent No. 3096, April 4, 1972.

HARTSELLE (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. This is a nearly thornless, staminate tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Hartselle, Alabama.

IMPERIAL (Cole Nurs. Co., Painesville, Ohio, Fall Trade List 1957, p. 8) — graceful spreading variety, branches symmetrically arranged at nearly 90-degree angles forming a regular and compact tree, grows straight without staking. Plant Patent No. 1605, May 21, 1957.

LAKE (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description.

LAKE'S NO. 1 (Shenandoah Nurs., Shenandoah, Iowa, Wholesale Trade List, Fall 1974-Spring 1975, p. 24) — small, spreading type thornless locust to 30 feet.

LAKE'S NO. 2 (Shenandoah Nurs., Shenandoah, Iowa, Wholesale Trade List, Fall 1974-Spring 1975, p. 24) = **ROYAL GREEN.**

LOWLAND (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. This is a "very aesthetic" staminate tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Jefferson Co., Tennessee.

MAJESTIC (Cole Nurs. Co., Painesville, Ohio, Spring Trade List 1957, p. 10) — strong, exceptionally graceful tree of spreading growth habit, entirely thornless, flowers occasionally polygamous, but seeding is light. Plant Patent No. 1534, December 11, 1956.

MAJOR (B.L. Wagenknecht, Arnoldia 21: 31-34, 1961) — as a cultivar of *G. triacanthos* in his "alphabetical list," but should be placed only in *G. sinensis* Lamarck.

MANDAN (Woody Ornamental and Shelter Plants for the North Central Region, 1964-1968. Five-Year Report on Regional Plantings of a Mandan Honey Locust, 6 p.) — a thornless male tree that had survived in Mandan, North Dakota for 18 years (Mandan Accession No. 9870.) Distributed for testing at 25 trial sites by the U.S. Plant Introduction Station, Ames, Iowa. Not presently considered as a cultivar name by the originators.

MARKETT (D.H. Scanlon III, *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31) — moderately thorny tree, originated in Sandy Springs, South Carolina.

MAXWELL (Plumfield Nurseries, Inc., Fremont, Nebraska, Wholesale Trade List, Spring 1957, p. 11) — budded tree with nice growth habit, seedless and podless. Original tree in yard of Earl Maxwell, Lincoln Nebraska.

MICROSPERMA (F.L. Spath Nurs., Berlin, Cat. 109, 1901-1902, p. 89) — without description.

MILLWOOD (Sunny Ridge Nurs., Swarthmore, Pennsylvania, News Bulletin and Price List, Spring 1941, p. 4) — without description. According to S.B. Chase, J. Forestry 45: 715-722, 1947, the original tree was a thornless, 6-inch tree located near Lake Junuluska, North Carolina. Pods from this tree contained 31 percent sugar on a dry weight basis. Cultivar named for the property owner, Dave Millwood. According to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31, this tree won 3rd prize in a contest (*ca.* 1934) sponsored by the Tennessee Valley Authority.

MONOSPERMA (L. Beissner, E. Schelle, and H. Zabel, Handb. der Laubholz-Benennung, Berlin, 1903, p. 255) — although the authors stated that this was a horticultural variety, and not equivalent to *G. monosperma* Walter (= *G. aquatica* Marshall); and although it was accepted as a cultivar name of *G. triacanthos* by B.L. Wagenknecht, Arnoldia 21: 31-34, we believe it is synonymous with *G. aquatica.*

MORAINE (The Siebenthaler Co., Dayton, Ohio, Cat. 158, 1949, p. 11) — without description. Registered as AAN Register 262 in Proc. Amer. Assoc. Nurserymen 76th Ann. Conv., 1951, p. 174. Plant Patent No. 836, May 17, 1949. Thornless and fruitless, large vigorous tree with spreading crown.

MORROW (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. It is a staminate tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Haywood Co., North Carolina.

NANA (J.C. Loudon, Arboretum et Fruticetum Britannicum 2: 654, 1838) — as cv. of *G. sinensis* Lamarck or *G. horrida* Salisbury, tree of somewhat lower growth than the species. Should be *G. triacanthos* according to B.L. Wagenknecht, Arnoldia 21: 31-34, 1961.

NANA INERMIS (L. Beissner, E. Schelle, H. Zabel, Handb. der Laubholz-Benennung, Berlin, 1903, p. 255) — as *G. sinensis nana inermis.* According to B.L. Wagenknecht, Arnoldia 21: 31-34, 1961, this = **NANA.**

ORR (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. It is a vigorous, nearly thornless tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Hartselle, Alabama.

PARK (Marshall Nurs., Arlington, Nebraska, Price List Spring 1958, p. 6) — thornless, podless.

PAUL BUNYAN (Ilgenfritz Nurs. Inc., Monroe, Michigan, Trade List Fall 1977, p. 7) — thornless, tall grower, branches freely.

PENDULA (A. de Talou, Hortic. Franc. 1859, p. 155-158) = **BUJOTII.**

PENN (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. It is a vigorous, nearly thornless tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Morgan Co., Alabama.

PIN CUSHION (A. McGill & Son, Fairview, Oregon, Wholesale Price List Fall 1968-Spring 1969, p. 2) — unusual form, dark green foliage forms in clusters spaced at intervals along the branches. Plant Patent No. 2680, October 11, 1966 by John McIntyre, Gresham, Oregon.

ROYAL GREEN (R.S. Hebb, Arnoldia 32(6): 277-287, 1971) — name registered by W. Atlee Burpee Co., Philadelphia, Pennsylvania for a new form of thornless honeylocust that originated at Shenandoah Nurs., Shenandoah, Iowa; straight trunk with compact upright habit. Although Hebb stated that it was first offered to the wholesale trade in 1970 as 'Lakes #2,' Shenandoah Nurs. still listed 'Lake's No. 2' in their Fall 1974-Spring 1975 Wholesale Trade List, p. 24.

RUBYLACE (Princeton Nurs., Princeton, New Jersey, Wholesale Price List Fall 1964-Spring 1965, p. 33, illus.) — "foliage color comparable to Schwedler maple, new growth is bright ruby red which darkens to a bronze green as the leaves mature." Plant Patent No. 2038, March 21, 1961. Thornless and fruitless.

SCHOFER (Nut Tree Nurs., Downingtown, Pennsylvania, Price List, Fall 1960-Spring 1961, p. 11) — sweet pods, originated at Pennsburg, Pennsylvania, some 500 miles north of other (sweet) varieties.

SHADEMASTER (Princeton Nurs., Princeton, New Jersey, Wholesale Price List, Fall 1956, p. 35 illus.) — straight, strong trunk with ascending branches forming a symmetrical crown; thornless. Plant Patent No. 1515, September 11, 1956. No fruit observed up to that time.

SEILER (Linn County Nurs., Center Point, Iowa, Cat. 1949) — large, widespreading tree; almost completely seedless.

SKYLINE (Cole Nurs. Co., Painesville, Ohio, Fall Trade List 1957, p. 9) — distinctive pyramidal form, wide branch angles of 60 to 90 degrees, emerging leaves have reddish-bronze cast, flowers mostly male. Plant Patent No. 1619, July 16, 1957.

SMITH (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 275) — without description. A vigorous, staminate tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Origin unknown.

STEPHENS (Marshalls Nurs., Arlington, Nebraska, Handbook of Trees and Plants, undated but rcd. by USDA Library, February 21, 1939, p. 6) — as "Stephens' Thornless," found on farm of Dan V. Stephens, northwest of Arlington; thornless, straight-growing and symmetrical.

STRICKLER (Nut Tree Nrus., Downingtown, Pennsylvania, Progress Report for Fall 1944, December 30, 1944, p. 1) — a selection from Mt. Joy, Pennsylvania made by J. Russell Smith; 31 percent sugar in pods, but with rather bitter flavor.

SUMMERGOLD (Handy Nurs. Co., Portland, Oregon, Wholesale Price List, 1971, p. 9) — foliage gives lace-like effect, new growth golden, later turning green, tree of broad, pyramidal form.

SUNBURST (Cole Nurs. Co., Painesville, Ohio, Spring Trade List 1955, p. 7 and back cover) — free of thorns and seeds, spreading branching habit with symmetrical and broadly pyramidal head, bright golden-bronze leaf coloring is limited to 8 to 10 inches of branch tips. Plant Patent No. 1313, November 2, 1954.

SUNSPLASH (Richard Bush's Nurs., Canby, Oregon, Wholesale Price List, Fall and Spring 1981-1982; and perhaps in earlier catalogs) — this name should be considered as a commercial synonym for **SUNBURST.**

THORNLESS (H.P. Kelsey and W.A. Dayton, Standardized Plant Names, 1942, p. 275) — as equal to *inermis.*

TONY (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description.

TORBETT (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. Vigorous tree, with high sugar content pods according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree won 2nd prize in a contest sponsored by the Tennessee Valley Authority (*ca.* 1934) with 34.3 percent sugar. Named for the tree owner, J.A. Torbett, Rhea Co., Tennessee.

TRUE-SHADE (Pacific Coast Nursery, Inc., Portland, Oregon, Wholesale Price List, Fall 1973-Spring 1974, p. 10, Trade-marked) — strong grower, dark shiny bark and light green foliage.

URBANA (J.C. McDaniel, *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 113-118) — vigorous, entirely thornless, purely staminate.

VARIEGATA — name listed by B.L. Wagenknecht, Arnoldia 21: 31-34, 1961, but originally cited as "Foliis Variegatis" in Kew Handlist of Trees and Shrubs, Ed. 2, 1902, p. 203 as a group, not a cultivar name.

WARD (S.B. Chase, J. Forestry 45: 715-722, 1947) — without description. It is a nearly thornless, staminate tree according to D.H. Scanlon III *In* Tree Crops for Energy Co-Production on Farms, U.S. Dept. Commerce, 1980, p. 21-31. Original tree from Haywood Co., North Carolina.

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ABSTRACT

LARSEN, F.E., G.S. ARBUSREWIL, and R. FRITTS, JR. 1982. **Defoliating trees before digging.** Am. Nurseryman 156(8): 37-39.

Field-grown, deciduous nursery stock is commonly slow to defoliate in fall, when it is to be dug, because of heavy fertilizer and water use in the nursery throughout the growing season. In areas where low temperatures pose a threat to the stock or hinder digging (if growers wait for natural defoliation), early leaf removal by hand stripping or mechanical means is common. Manual or mechanical defoliation is typically done early enough to allow digging just prior to the average date of the onset of temperatures that could damage stock or prevent digging. The threat of damaging cold weather may encourage growers to allow plenty of leeway for defoliation. The effects of early leaf removal vary from year to year, depending on stock maturity and condition, cultural factors, and weather. However, it appears that the process of accumulating carbohydrate reserves is not complete until nature is allowed to take its course and produce a "normal" leaf fall. Delay defoliation as long as possible in relation to the average expected weather conditions. Otherwise, plant quality and performance after storage could be reduced.