

Two New Hybrid Oaks (*Quercus* - FAGACEAE)

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Hybridization within the genus *Quercus* often occurs wherever oaks within the same subgenus grow. Little (1979) lists more than 100 naturally occurring oak hybrids found in the United States. Rehder (1940) also provides information on hybrids associated with individual species. Hybridization between old-world and new-world oaks is relatively rare. The English oak (*Quercus robur* L.) is one of the most widely used old-world oaks in the United States with many cultivars (McArdle & Santamour, Jr., 1985). Only two hybrids of *Q. robur* and new-world oaks have been described (Palmer, 1948; Rehder, 1915). They are *Q. ×bimundorum* E. J. Palmer (*Q. alba* L. × *Q. robur*) and *Q. ×sargentii* Rehder (*Q. prinus* L. × *Q. robur*). The new oak hybrids herein described have come from collections made by International Oak Society member Earl Cully, Jacksonville, Illinois, USA. All descriptions and measurements were based on pressed samples taken by the authors from living material. The mean measurements are in parentheses following the range measurements.

Quercus ×macdanielii T.L. Green & W.J. Hess, (*Q. robur* × *Q. macrocarpa* Michx.), hybrida nov. (Fig. 1). TYPE: U.S.A.

Illinois: Morgan Co., tree selected from a row of experimental English oak hybrids at the Earl Cully Nursery, RR 5, Jacksonville, 31 August 1996, Cully, s.n. (holotype: MOR. isotypes: MWI, NA) *Differt a Quercus robur subfolia pilis stellatis tomentosus et differt a Q. macrocarpa glande longus*

pedunculatus.

Trees pyramidal to rounded, excurrent, 12 m tall and wide at 21 years. Bark gray-brown, divided into small rectangular plates, aligned vertically, not deeply fissured; young branches greenish-gray, smooth, without corky ridges. Leaves coriaceous; lamina 6—15 (11.2)

X 4—11 (7.5) cm, oblong-ovate, upper surface dark green, glossy, glabrous, lower surface silver-green to gray-green, tomentulose, the margin entire, coarsely 5—7 lobed, usually rounded to obtuse teeth, sinus shallow to 1/2 depth to midrib, base cuneate or rounded to auriculate, apex broadly acute to obtuse or rounded, on occasion re-tuse; petioles 0.6—1.6 (1.1) cm long. Buds 2—3 mm long, rounded, blunt, reddish brown. Fruits single or double on peduncles 2.7—6 (4.5) cm long; acorns broadly ovoid to elliptical, 18—27 (22) X 14—20 (16.3), the apex papilla 2 mm long, with golden tomentum; cupules 14—17 (15.4) X 18—22 (20.3) mm, covering 1/2 acorn, base conic at attachment to pedicel, scales covered



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Quercus xwarei T.L. Green & W.J. Hess (*Quercus robur* L. 'Fastigiata' x *Q. bicolor* Willd.) A superior f2 specimen, as yet unnamed, selected at Starhill Forest, Illinois, USA. Nurseryman Earl Cully has trademarked another selection (cultivar 'Long') of this hybrid as REGAL PRINCE®.

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with silver, velvety tomentum, the apex caudate.

Common name: The McDaniel oak. The parent tree of *Quercus* \times *macdanielii* was

identified by J. C. McDaniel, Horticulture Professor, University of Illinois, as an English oak and Bur oak hybrid grow-

ing in Mt. Hope Cemetery in Urbana, Illinois. Seeds were collected from this tree by Mr. Cully in 1974. The parent tree died in 1993.

Horticulturally, this tree was originally selected for its vigor and high leaf quality. This selection maintains a central leader with a dense, uniformly pyramidal outline. It is being vegetatively propagated for introduction as a cultivar that displays a moderate growth rate, good winter hardiness (Zone 4, USDA), a good form, and excellent leaf quality. Mr. Cully's selection will have the cultivar name of 'Clemons' and is trademarked as HERITAGE®. A

Photo courtesy of William Hess



Fig. 1 Holotype of *Quercus* \times *macdanielii* T.L. Green & W. Hess

plant patent is pending.

Quercus \times warei T.L. Green & W.J. Hess, (*Q. robur* L. 'Fastigiata' \times *Q. bicolor* Willd.) hybrida nov. (Fig. 2).
 TYPE: U.S.A. Illinois: Morgan Co., tree selected from a row of English oak hybrids at the Earl Cully Nursery, RR 5, Jacksonville, 31 August 1996, *Cully s.n.* (holotype: MOR. isotype: MWI, NA)

Differt a Quercus robur subfolia pilis stellatis tomentosus et differt a Q. bicolor petiolus et pedunculus pro parte maxima glaber; lamina basi rotundatis vel subcordatis.

Trees fastigiata, excurrent, 10.7 m X 4.2 m at 21 years. Bark on trunk gray-brown, divided into small rectangular plates, vertically aligned, thin, slightly exfoliating; young branches green-gray, exfoliating, mostly silver-gray beneath. Leaves coriaceous; lamina 6—18 (14.4) X 3—11.5 (8.1) cm, obovate to widely

obovate, upper surface dark green, glossy, glabrous; lower surface tomentose, silver on youngest leaves, and gray-green on mature leaves, the margin entire, coarsely 6—8 lobed, usually obtuse teeth, sinus depth is shallow, base cuneate, apex narrowly to broadly acute; petiole 0.5—1.5 (0.7) cm long, mostly glabrous. Buds 2—3 mm long, rounded,



Fig. 1 Holotype of *Quercus* \times warei T.L. Green & W. Hess

Photo courtesy of William Hess

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blunt, reddish brown, bud scale margins with tufts of hairs. Fruits single or double on mostly glabrous peduncles 6—7.5 (6.8) cm long; acorns broadly ovoid to elliptical, 19—26 (21.1) X 14—18 (15.7) mm, exposed shell area covered with white tomentum, becoming slightly glabrate; cupules hemispheric, 13—16 (14.3) X 20—24 (21.5) mm, covering up to ½ the acorn, the base flat at peduncle attachment, scales covered with silver, velvety tomentum, tuberculate at lower half, the apex caudate.

Common name: The Ware oak. Seeds were sent to Mr. Earl Cully in 1974 from a cultivar of a fastigiata English oak growing on the University of Missouri campus, Columbia, Missouri, USA. Growing adjacent to this tree was *Quercus bicolor*, the putative pollen source. This hybrid is named in honor of Dr. George Ware, former Research Department Head/Dendrologist at The Morton Arboretum, and now Research Associate.

Horticulturally, the Ware oak was originally selected for its vigor, distinct bicolor leaf, tight upright shape, and ex-

cellent powdery mildew resistance. It is being vegetatively propagated for introduction as a cultivar that displays a moderate growth rate, good winter hardiness (Zone 4, USDA), a good tight upright form, and excellent leaf quality. Mr. Cully's selection has a cultivar name of 'Long' and will be trademarked as REGAL PRINCE®. A plant patent is pending.

Literature Cited

- 1 Little, Jr., E.L. 1979. Check List of Native and Naturalized Trees in the United States. USDA Agriculture Handbook 541.
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Editor's Note: Dr. Ware and the late Professor McDaniel each are well known for their work with oaks in Illinois. Joe McDaniel introduced many people to the concept of hybridization in oaks; George Ware, a member of the International Oak Society, presented the opening address at our first conference in 1994.