

Homonyms, Synonyms, and Frustrations:

An Introduction to the Name Problems of Oaks

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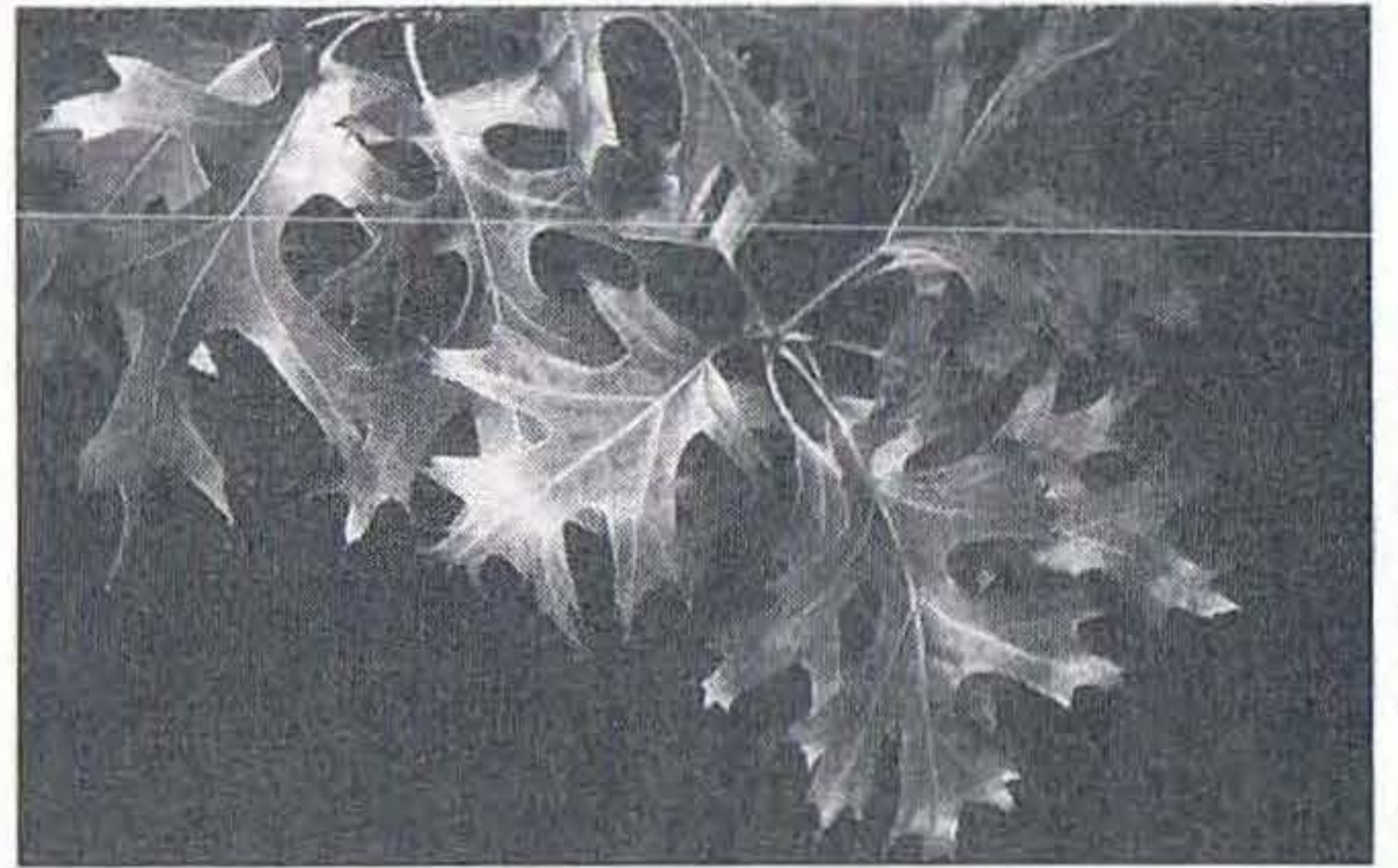
The nomenclature of the genus *Quercus* is a nightmare for non-taxonomists. It can be very difficult even for skilled scientists to navigate the jungle of Latin names and conflicting authors, and some may find their research results, botanical collections, herbaria, or nursery catalogs compromised by confusion. Here is an overview of the situation, presented by non-taxonomists for the benefit of other non-taxonomists.

One of the main difficulties encountered with oak names involves different authors applying the same name to different species. An example can be found in the trees formerly known as *Q. prinus* L. in the United States. This old name covered at least two different species (*Q. montana* Willd. in common usage, but perhaps more correctly by priority of publication *Q. michauxii* Nuttall). It is not clear which speci-

men Linnaeus used for his type. In current literature, the name *Q. prinus* is being discarded for this reason.

These species have a close relative, the dwarf chestnut oak *Q. prinoides* L. Among other names, it has been called *Q. prinus* var. *pumila* Michx., *Q. prinus* var. *humilis* Marshall, and *Q. prinus* var. *chincapin* F.Michx. But since *Q. prinus* itself is a confused name, where does this leave the dwarf chestnut oak? It seems closest to the yellow chestnut oak *Q. muhlenbergii* Engelm. (some try to spell it *Q. muehlenbergii*, or even *Q. mühlenbergii*). This larger species once was thought to be a variety of the dwarf species. Luckily, the point is moot, because dwarf chestnut oak is now recognized as a distinct species.

Another case involves the confused name *Q. texana* Buckley. The name, at one taxonomic level or another, commonly is applied to a small Shumard-like oak found in Texas (= *Q. shumardii* var. or subsp. *texana*). The name also has been used for *Q. gravesii* Sudworth, another Texas species. Either application seems logical to the casual observer since these both are predominantly Texas trees. But, again, there was confusion regarding the type specimen. The unfortunate result is that *Q. texana* (as attributed to Buckley) now has been “corrected” in a narrow-viewed interpretation of the rules of nomenclature to apply to Nuttall oak, commonly known in the literature as *Q. nuttallii* E.J.Palmer. A native of the Mississippi River Valley, Nuttall oak is not a Texas tree, barely



Foliage of the Texas oak species Quercus buckelyi Nixon and Dorr (formerly known as Quercus texana) at the New Mexico Military Institute in Roswell, New Mexico.



Foliage of Quercus nuttallii E.J. Palmer (renamed Quercus texana Buckley due to confusion over the type specimen) near Taylor, Arkansas.

extending west across the Texas border. This obviously was not Buckley’s intent, and applying *Q. texana* to this species serves only to increase confusion. In such cases we sometimes serve the rules, regardless of logic or consequences, rather than having the rules serve us. Occasionally those rules may be interpreted in seeming defiance of their underlying purpose, perhaps by an over-enthusiastic taxonomist seduced by the satisfaction of renaming a plant. More likely, some taxonomists still remain in-

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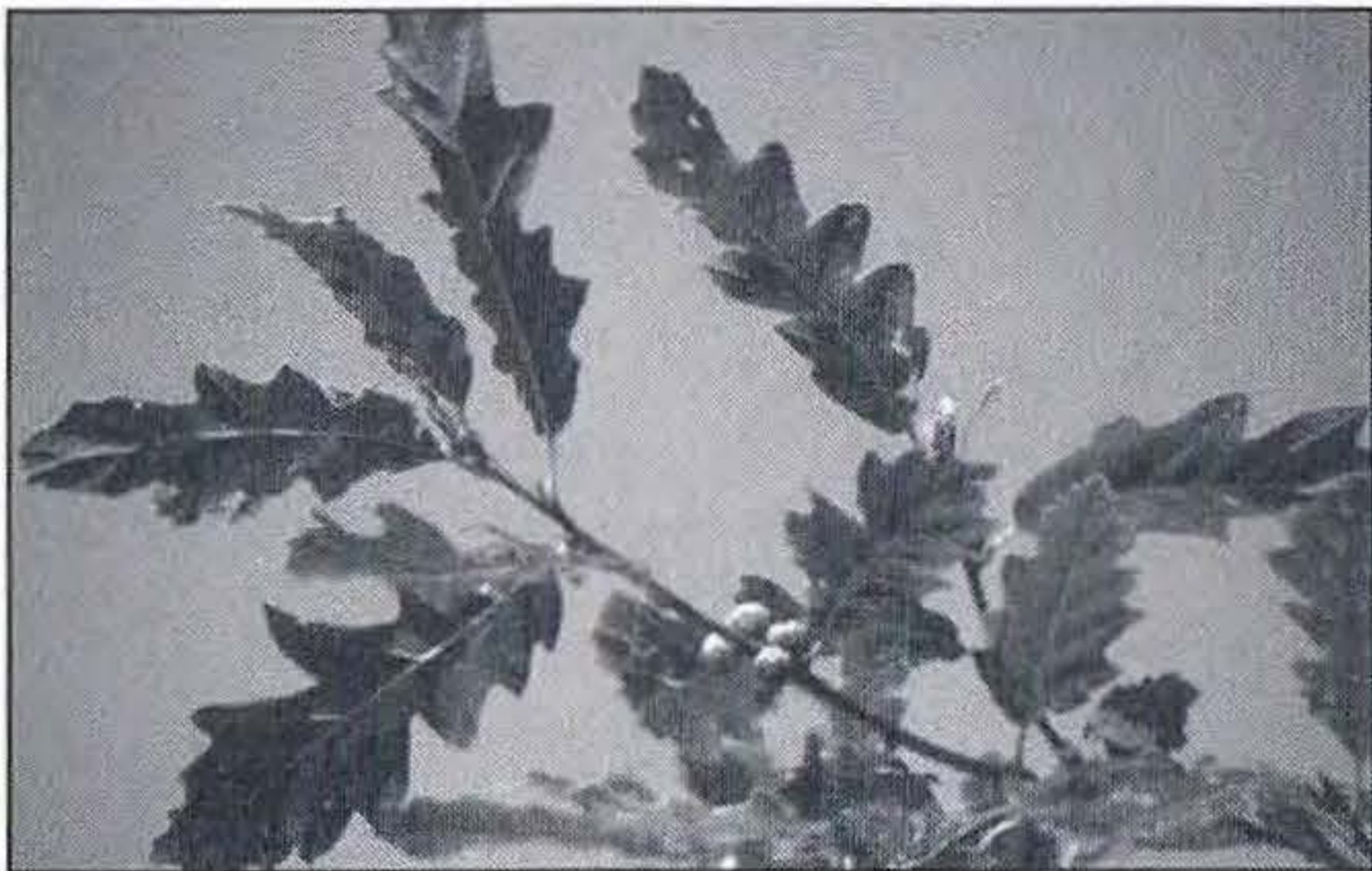
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tent upon following blindly the rule of priority of publication, regardless of the resultant displacement of established names.

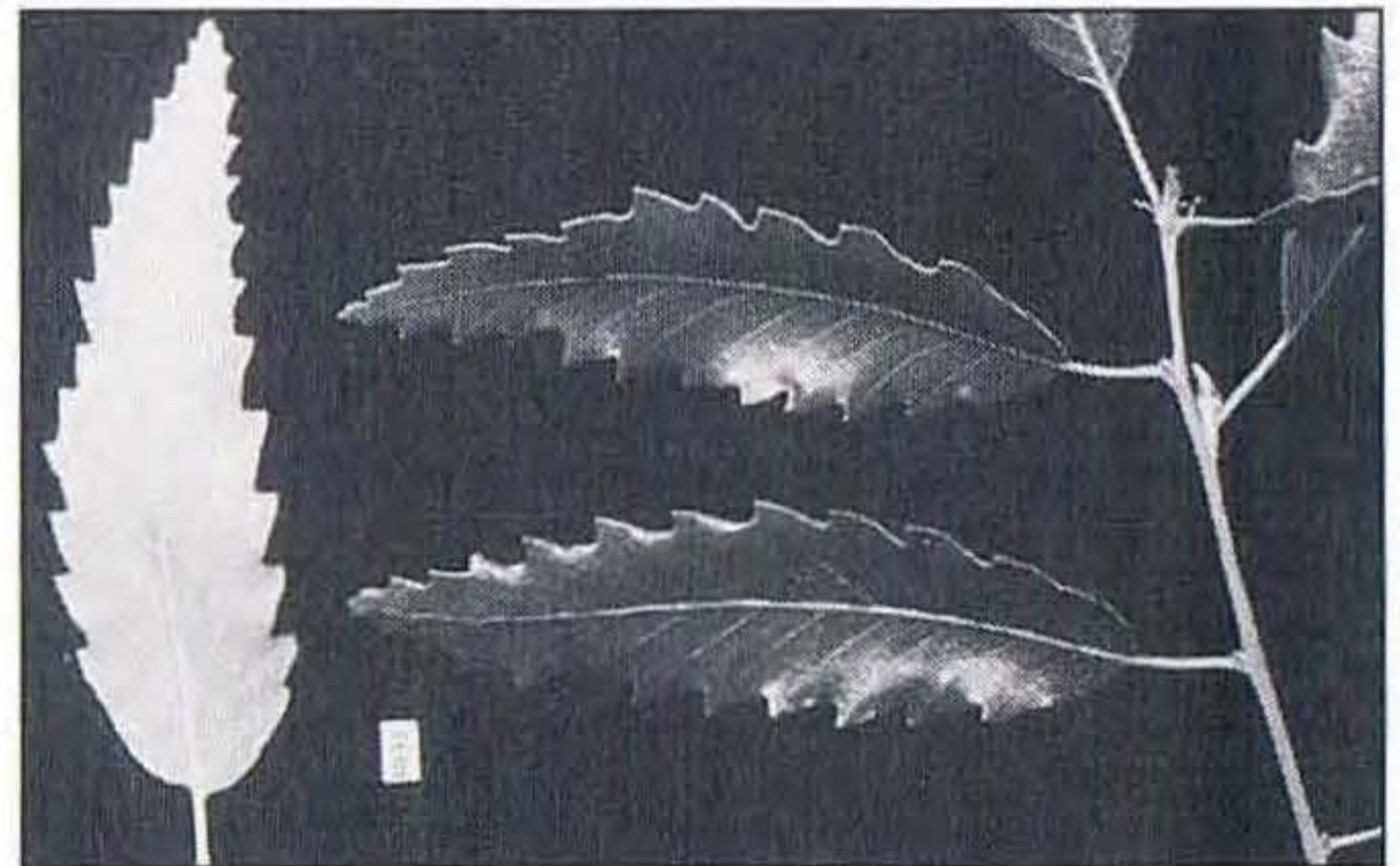
Recent recommendations (e.g. at the Tokyo International Botanical Congress) fortunately discourage such a narrow view. For example, one resolution of the Tokyo Congress stated in part, "*Considering the great importance of a stable system of scientific names of plants for use in the pure and applied sciences and in many other domains of public life and economy; noting with satisfaction recent important improvements in the International Code of Botanical Nomenclature and ongoing efforts to explore new avenues for increased stability and security in the application of plant names; the XV International Botanical Congress urges*

plant taxonomists, while such work continues, to avoid displacing well-established names for purely nomenclatural reasons, whether by change in their application or by resurrection of long-forgotten names..."

Perhaps a more appropriate solution in this particular example would have been to conserve the established name for Nuttall oak as *Nomen Specificum Conservandum*. Hopefully, *Q. nuttallii* will indeed be conserved during the next IBC, and poor old *Q. texana* will be rejected as a *nomen confusum* and laid to rest. Many people will wonder what became of *Q. texana*, whatever species that name meant to them. But at least *Q. nuttallii* and the new name for Texas Shumard oak (*Q. buckleyi*) are discrete and will not be used interchangeably for the same species.



Quercus castaneifolia C.A. Mey. at the British National Oak Reference Collection, Sir Harold Hillier Arboretum, Hampshire, England.



Quercus afares Pomel at the National Arboretum des Barres, France.

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photo by Thierry Lamant

The name *Q. serrata* similarly has been applied by different authors to several species, including one, *Castanopsis indica* (Roxb. ex Lindl.) A.D.C., that is not even an oak! The rules of priority have caused it to be assigned officially to the Asian species most of us outside of Japan know as *Q. glandulifera* Blume. This frequently cultivated oak now must be named *Q. serrata* Thunb., thus confusing it with *Q. acutissima* Carruth. and *Q. variabilis* Blume, two species which also are found in Asia and have shared the *Q. serrata* homonym epithet. If sufficient protest is raised, perhaps *Q. serrata* also might be retired as *nomen confusum* and the familiar *Q. glandulifera* Blume resurrected and conserved. But then again, the Japanese, who have used the name *Q. serrata* for years, might have cause to become upset—and it is their tree, after all.

Asia also is home to the *Cyclobalanopsis* group (the ring-cupped oaks). Discussions have persisted for decades regarding the status of this group, previously considered by some to be a separate genus, but now, by most, to be a subgenus of *Quercus*. So if we find a species listed in old literature as *Cyclobalanopsis pseudoglauca* Y.K.Li et X.M.Wang, how many readers will recognize it as *Quercus liboensis* Z.K.Zhou, corrected in 1998 by Dr. Zhekun Zhou in a paper published in *International Oaks* issue number 8?

We might turn to *Q. aegilops* L. as a classic example of a *nomen confusum*. This name covered *Q. vallonea* Kotschy



Quercus liboensis Z.K. Zhou (syn. *Cyclobalanopsis pseudoglauca* Y.K. Li et X.M. Wang) at the National Arboretum des Barres, France.

(= *Q. aegilops* Boiss. and *Q. aegilops* var. *vallonea* A.Camus), *Q. brantii* Lindl., *Q. ithaburensis* Decne. var. *ithaburensis* (= *Q. look* Kotschy), *Q. ithaburensis* var. *macrolepis* Boiss. (= *Q. macrolepis* Kotschy, *Q. graeca* Kotschy, *Q. aegilops* Lam. and even *Q. ithaburensis* subsp. *macrolepis* Hedge & Yaltirik). This last usage was included in *Flora of Turkey and Aegean Islands* in 1981. In this list also could be found *Q. aegilops* Scop. and *Q. aegilops* Griseb. *Q. aegilops* Scop. is simply a synonym of *Q. cerris* L. (One of its other synonyms is *Q. lanuginosa* Lam., but be careful, because *Q. lanuginosa* Thuill. is a synonym of *Q. pubescens* Willd.!) *Q. aegilops* Griseb. is in reality *Q. trojana* Webb. (= *Q. macedonica* DC. and *Q. grisebachii* Kotschy).

Some taxa are so closely related that their species status is in dispute. For example, *Q. haas* Kotschy (= *Q. robur* var. *haas* DC.) is close to *Q. robur* L. (but don't confuse it with *Q. haas* Wenzig). The subspecies *Q. robur* subsp.

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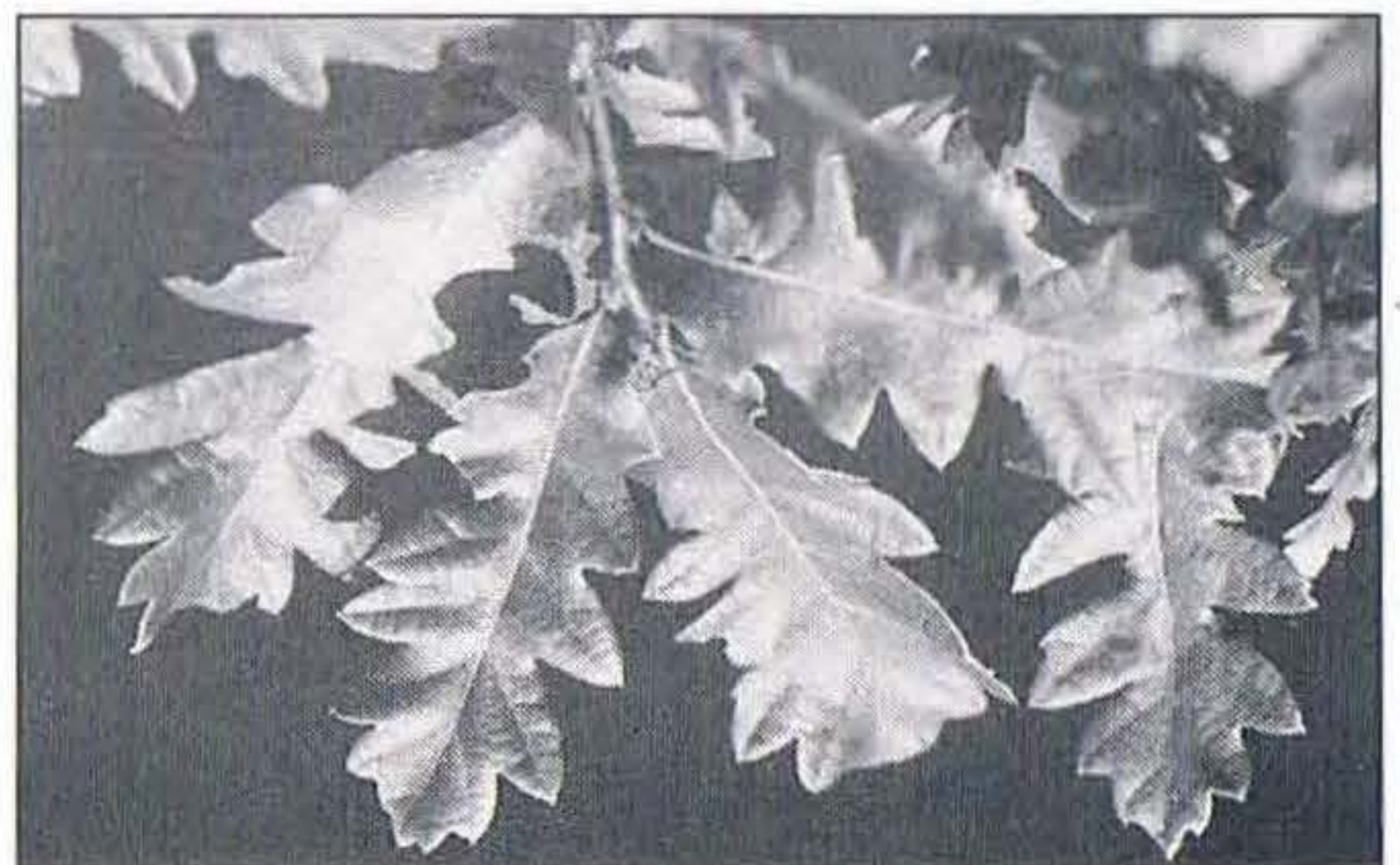
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pedunculiflora K.Koch (Menitsky) (= *Q. pedunculiflora* K.Koch, and *Q. rhodopea* Vel.) also is very close to *Q. robur* L. These taxa form a geographic continuum with *Q. robur* from Southeastern Europe to the Transcaucasus. They are regarded by various authorities as deserving various degrees of taxonomic rank. In such cases, local botanists often seem to notice consistent differences between such taxa. Perhaps because they live among them throughout the seasons, and thus they often consider them as distinct species. Distant botanists working only from herbarium specimens, or visiting a habitat only occasionally, might instead tend to be "lumpers" and subjugate the several taxa under a single species. Such are the dilemmas caused by human attempts to classify and categorize the continuum of nature.

Many other examples can be found. The

North American bluejack oak *Q. incana* W.Bartram is a homonym, not closely connected either taxonomically or geographically with the Himalayan species *Q. incana* Roxb. (correctly known as *Q. leucotrichophora* A.Camus). *Q. dalechampii* Ten. (= *Q. aurea* Wierzb.), a species related to *Q. petraea* Liebl. (perhaps closer to *Q. pubescens* Willd.), also has a homonym: *Q. dalechampii* Wenz. This one is in reality *Q. virgiliana* Ten., another Mediterranean oak.

Nearby, in North Africa, lives the species known as *Q. afares* Pomel (= *Q. castaneifolia* var. *algeriensis* Bean, and *Q. castaneifolia* var. *incana* Batt.). For a long time this species was described as a synonym of *Q. castaneifolia* C.A.Mey, an oak from central Asia. *Q. afares* is generally considered to be a distinct species from *Q. castaneifolia*, which differs from the typical form in the erect or pyramidal



Turkey oak (*Quercus laevis* Walter) at Manchester State Forest, South Carolina, USA (LEFT); Turkey oak (*Quercus cerris* L.) from Romania provenance, at Starhill Forest Arboretum, Illinois, USA (RIGHT).

habit, much smaller leaves, young shoots more downy, and acorns clustered four or five together (fewer in *Q. castaneifolia*). By any name, *Q. afares* is as hardy as *Q. castaneifolia* in the gardens of Northern France.

Also in the Mediterranean, *Q. calliprinos* Webb. (= *Q. palaestina* Kotschy) is the tree-form subspecies or relative of *Q. coccifera* L., and many consider it to be a distinct species. *Q. coccifera* is a scrub oak (3-4 m maximum). The plant distinguished by some as *Q. calliprinos* is taller, often with one single trunk, and has more oblong leaves and more elongated, linear cup scales on the acorn (which is 2-3 cm long). The acorns are enclosed by half or less in the cup (half or more for *Q. coccifera*).

Other examples include *Q. mas* Thore, an oak which poses different questions. This species is listed in books as being found in Southwest France and Spain. But it is not included in a new French flora as a synonym of any French oak. The *Kew World Checklist and Bibliography of Fagales* classifies it as a synonym of *Q. petraea* Liebl. *Q. polycarpa* Schur. and *Q. iberica* Bieb. also are close to *Q. petraea* Liebl. and not universally regarded as distinct. The leaves of *Q. iberica* Bieb are obovate lanceolate, with rounded and somewhat cordate bases. Young leaves of *Q. polycarpa* Schur. are puberulous beneath, and the acorn cup has thickened, gibbous scales.

As soon as our paper is published, we anticipate instant feedback from many knowledgeable readers, disputing the

nomenclatural priority and taxonomy we have selected for some of the taxa we cite as examples. These challenges may be quite defensible, but of course they will serve well to reinforce our basic point! One recent treatment (the *Kew World Checklist and Bibliography of Fagales*) lists nearly 3000 synonyms for oaks, referring each to what is recommended as an accepted name. There are many familiar old names being discarded in that list, and some of them will not die quietly. These problems are likely to haunt us for years to come.

The oaks add yet another dimension to all this confusion, due to their propensity to form interspecific hybrids within infrageneric groups. The frequent uncertainty of parentage, coupled with disagreements regarding the proper hybrid epithets and their typographic presentation, are complex and beyond the scope of this paper. Then there are the diverse treatments for taxonomic groups of species below the rank of genus. Are they subgenera, sections, or series? And is the white oak group correctly designated *Quercus*, *Lepidobalanus*, *Leucobalanus*, or *Euquercus*? (The correct answer is the first one, but the others are more frequently seen in old or non-taxonomic literature.)

Are you ready to give up on botanical names and use vernacular names? The solution is not so simple. For example, how will you reconcile the Turkey oak (*Q. cerris* L.) with the turkey oak (*Q. laevis*

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Walter), two species from different continents and different taxonomic groups? (Many of us now do so by using “Turkish oak” for the former, but we must remember that there are many other oaks also native to Turkey.) And what is the true “white” oak, “red” oak, “black” oak, “scrub” oak, or “swamp” oak? Every region claims its own. How would you distinguish among the ubiquitous *encinos* and *robes* of Latin America? These common names apply to more than a hundred species.

Furthermore, if we used only vernacular names, how many people would know that the English oak of Britain, the *quercia* of Italy, and the *stieleiche* of Germany all are the same species—the common European pedunculate oak, *Q. robur* L.? And how can we account for the problems caused by unscrupulous or careless nurserymen who explore for plants, fail to identify them properly (or at all), and release them into the trade under invalid or invented names?

The only true answer is to use Latin names in accordance with the rules given in the most current edition of the *International Code of Botanical Nomenclature*. The new *World Checklist and Bibliography of Fagales* will be very useful for some of these problems. Keeping current with esoteric journals such as *Taxon* will

help as well, for those few people who are involved deeply enough with oak nomenclature to do so. Someday, the International Oak Society may serve as the international registrar for the genus and coordinate oak nomenclature worldwide, beginning with cultivars.

For the majority of us whose expertise (and professional life work) is not taxonomy, here is some good advice. Always try to use valid names. But to avoid possible confusion, remember to add the author attribution to the botanical name in your research paper, and on the label of every seedling or packet of acorns!

The authors appreciate the technical review provided by Dr. Allen Coombes of the Sir Harold Hillier Arboretum, Hampshire, United Kingdom. (Dr. Coombes is the lead taxonomic reviewer for International Oaks.)

For further reading

W.J.Bean, *Trees and shrubs hardy in the British Isles*

G.Krüssmann, *Manual of Trees and Shrubs Index Kewensis* (on CD-ROM, Oxford University Press)

Flora of North America, Vol. 3: *Magnoliophyta* (*Magnoliidae* and *Hamamelidae*)

R. Govaerts and D. Frodin, *World Checklist and Bibliography of Fagales*

International Oaks, Issue No. 8, Summer 1998
International Code of Botanical Nomenclature, adopted by the Fifteenth International Botanical Congress, Yokohama, Japan, 1993