The Writing of New Trees: Recent Introductions to Cultivation

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In 2002 I was living and working in the Netherlands. One afternoon the phone rang and a richly English voice identified its owner as Giles Coode-Adams. Might I be interested in writing a book about recently introduced trees?

Following early retirement from a career in finance, Giles had devoted his time to horticultural causes, first fund-raising for Kew and later becoming Treasurer and then President of the Royal Horticultural Society. Among his numerous commitments he was also Chairman of the International Dendrology Society’s Scientific and Education Committee, reflecting his personal interest in trees and woody plants in general. While involved with Kew he had been the occasional recipient of young specimens grown from seed collected on expeditions, and indeed had taken part in a seed-collecting trip to Japan. The only problem was that, for so many of the recently introduced trees he was encountering, there was no useful literature to look them up in.

His proposal to the committee that a book on such trees would be valuable was accepted and they started looking for authors. I am still not quite sure how they found me, as I was then by no means dendrological, but I had recently co-authored and edited a well-reviewed book on snowdrops (Galanthus) that may have had something to do with it. To cut a long story short, the committee decided I was the right person for the job. Generous sponsors provided funding and the task could begin.

SETTING PARAMETERS

The assignment was to produce a book about all the tree species introduced to cultivation in recent decades, or those that had been in cultivation for longer but for which there was no good description. The standard reference in Britain is the venerated W. J. Bean’s Trees and Shrubs Hardy in the British Isles, first published in 1914 and last updated in the 1970s to form the eighth edition. Its botanical descriptions are complemented by readable discursive text about the plant and its cultivation requirements, rather than the terse encyclopaedic format of, for example, Krüssmann’s more comprehensive but less informative works (Manual of Cultivated Conifers and Manual of Broadleaved Trees and Shrubs). But Bean’s book obviously fails to cover any introductions made since the 1970s, and many species, then poorly known, were covered in a footnote only. There are surprising omissions, too: the familiar American East Coast natives Pinus taeda (loblolly pine) and Quercus muehlenbergii (chinkapin oak) were first introduced to Europe...
in the seventeenth century, but are not covered by Bean, probably because they have never been very successful in the British Isles.

It was therefore decided that the text should follow the format of description and discussion, and that any tree not discussed fully by Bean and now established in cultivation should be included in the new book. Its working title was New Trees, and as nobody could think of anything better, that stuck, with the addition of the subtitle Recent introductions to cultivation. But there were many other thorny issues for the Editorial Subcommittee. What geographical area should it cover? What is a tree?

On paper the last is easily answered. We applied the definition “a woody plant, normally with a single trunk reaching or exceeding 5 meters [16.4 feet] in height, at least in its native habitat,” thus excluding shrubs with multiple stems developing from below or close to the ground. In reality, of course, the distinction is much less simple and some things snuck in that are on the shrubby side, while some large shrubs are omitted. The difficulty is well-illustrated by Heptacodium miconioides (seven-son flower), a shrub that can achieve 10 meters [32.8 feet] or more in height and be pruned to a single trunk: it was excluded.

The book was to cover trees already in cultivation, rather than possibilities in the wild, so its coverage was determined by which species were established in collections in public and private gardens (ascertained by comparing accessions lists). Unlike Bean’s coverage, however, the new book was to be international in scope, reflecting the nature of the International Dendrology Society (IDS), but retaining the view that the trees should be hardy in temperate climates such as that of Britain. Where to draw the boundaries was less easy, but in Europe there is a clear distinction between the continental and

New shoot and young cones of Pinus taeda, loblolly pine.

Tree or shrub? Heptacodium miconioides (seen here displaying showy pink calyces in early autumn) was deemed too shrublike to fit into New Trees.
maritime climates of the north and the Mediterranean climate to the south. An obvious vegetational difference is the commercial cultivation of olives in the Mediterranean and this matches, with remarkable precision, the area of southern Europe experiencing USDA Zone 9 winter temperatures (average annual minimum temperature 20 to 30°F [-6.6 to -1.2°C]). Maritime areas further north may also have Zone 9 winter averages, but it is impossible to grow the subtropical species that thrive in the Mediterranean basin here. We also excluded such remarkable “hotspots” as the Isles of Scilly (Zone 10) whose diversity of species otherwise ungrowable in northern Europe would skew the book too far away from its core audience.

North America, with its diversity of climates, presented a different challenge. The southeastern corner of the United States, southern California, and the southwestern deserts all have a very distinct garden flora appropriate to their climatic conditions, again deviating from the key sense of temperate. So we decided that we’d include collections north of San Francisco on the west coast, and anything from North Carolina northwards in the east, and just strike boldly across the continent between those two points in defiance of geography, hardiness zones, etc. I don’t think we missed many significant collections by this approach.

RESEARCHING NEW TREES
With these parameters set it was possible to go through collection lists and work out what we would be covering. I forget how many names were on the original list but in the end we covered about 850 species in full, and mentioned many others that had a toehold in culviva-
tion. At this point I was joined by Ross Bayton, who was completing his Ph.D. at the University of Reading. With a horticultural as well as botanical background he was ideally suited to his task of preparing the botanical descriptions for each species. He worked at the Royal Botanic Gardens, Kew, where the authorities generously provided us with desk space in the herbarium (in Sub-basement A—which was better than it sounds) and all facilities, and so was able to tap the unique resources of Kew for information. Much came from published sources, but herbarium and living material was consulted for many descriptions.

Each description covers the morphological characters in detail, and provides notes on the tree’s geographical distribution, its habitat, conservation status, hardiness zone, and sources of useful illustrations. The taxonomy was taken from recent authoritative sources and where there are issues (such as differing opinions on correct name) a note was provided.

A unique feature of the book is its cross-referencing to the works of Bean and Krüssmann, which enables the reader to locate a description of an “old” tree quickly, and the opportunity was taken to supply up-to-date names for these taxa where there has been a change. New Trees therefore acts as an index to descriptions of almost all temperate cultivated trees, under almost any name. When using the book, please take time to read the introduction carefully.

In addition to directing the whole enterprise, my task was to produce the horticultural commentary for each species. This entailed gathering information about the tree from growers across the area on provenance and performance, then trying to make sense of it. That makes it sound easy! In reality it required a huge amount of traveling and endless emails and phone calls, as well as online and library research. In the process, however, I had a wonderful time, visiting arboreta all over North America, Europe, and the British Isles, meeting a host of interesting people. The generosity with which contacts gave their time to help with the project was remarkable.

Traveling to see collections was the highlight for me. I usually had a list of specimens to see, so I’d concentrate on those, but of course one can’t just ignore good trees, so I quickly gained a comprehensive education in all sorts of woody plants, not just recent introductions. Unfortunately, the only chance I had to visit the Arnold Arboretum was on a foul wet day in June 2006 when I and my guide Eric Hsu, then a Putnam Fellow at the Arboretum, got soaked to the skin. These were not conducive conditions
for recording details of trees, but one that really interested me was a large specimen of *Larix sibirica* whose label recorded that it had come from H. J. Elwes in 1900: I connected with this tree on several levels.

Henry John Elwes (1846–1922) was an important landowner in Gloucestershire, where he lived on the family estate at Colesbourne Park, where I now manage the gardens for his great-grandson, Sir Henry Elwes. With ample financial resources, Henry John Elwes was able to travel widely, and developed interests in many areas of natural history. He was a noted ornithologist and lepidopterist and a keen big-game hunter, but gardeners principally remember him for his discovery of *Galanthus elwesi* [in Turkey in 1874]. A quest for wild sheep took him to the Altai mountains of central Siberia in 1897 [where I followed his route, by chance, a hundred years later], but while there he saw magnificent forests of *Larix sibirica* and arranged for seed to be sent to him. About this time he became seriously interested in trees, having plans to plant large areas of woodland on the Colesbourne estate, and he started corresponding with notable dendrologists, including Charles Sprague Sargent at the Arnold Arboretum. This, presumably, is how the Arnold Arboretum received a seedling of *Larix sibirica* and arranged for seed to be sent to him. About this time he became seriously interested in trees, having plans to plant large areas of woodland on the Colesbourne estate, and he started corresponding with notable dendrologists, including Charles Sprague Sargent at the Arnold Arboretum. This, presumably, is how the Arnold Arboretum received a seedling of *Larix sibirica*. Exchanges were mutual: a specimen of E. H. Wilson’s collection of *Paulownia tomentosa* W769 made in Hubei in 1908 still grows at Colesbourne. *Larix sibirica*, on the other hand, was a failure here. Despite the local opinion that Colesbourne lacks a *d* in its first syllable, our climate is in reality not cold enough. Like most Siberian conifers, *Larix sibirica* comes into growth too early in mild maritime climates, and then the young shoots get frosted.

In consequence of its general uselessness in the British Isles *Larix sibirica* was given only a cursory note by Bean, but in other countries it is much more successful—in the United States, as evidenced by the Boston tree, and, for example, vigorous, healthy specimens in Minnesota; in Scandinavia; and in Iceland and Greenland, where it is the best tree for forestry planting. So, although not a recent introduction, it was an important species to cover in *New Trees*.

**WHERE IN THE WORLD?**

Once all the accounts were complete I counted the species that had come from different geographical regions. Introductions had come from all over the world, but as expected, nearly 50% were from China and the Sino-Himalayan region, which seems to be an inexhaustible source for garden plants of all kinds; one sometimes wonders what Wilson, Forrest, et al., were doing, when so much was missed! That, of course, is unfair. They had different targets, searching different areas and altitudes, and the difficulties of travel must have meant that many collections simply failed to arrive in a viable state. We also know, from the analysis made by Michael Dosmann and Peter Del Tredici of the survivorship of the collections made by the Sino-American Botanical Expedition (SABE) in 1980, that many species collected...
on any expedition soon fall by the wayside, or become represented by very few individual specimens in cultivation.

The SABE trip of 1980 remains one of the most significant of expeditions to China in terms of the species it brought back; *Liquidambar acalyicina* is outstanding and so are *Sorbus hemsleyi* and *Sorbus yuana*, although the latter is still poorly known and needs to be more widely distributed, preferably in pairs of unrelated clones to ensure a good set of its spectacular fruits. The stamp-collecting habit of only planting one individual is a great problem in arboreta across the world: we really need to encourage people to plant groups to maximize genetic diversity, especially as conservation in cultivation is one of the justifications for many a collecting trip.

The thirty-year run of mild winters in the British Isles has encouraged us to broaden our horizons into genera that would previously have been considered too tender for all but the mildest of gardens, with explorers trawling lower and lower altitudes, especially for broad-leaved evergreens. Among their haul in Asia have been a mass of evergreen magnolias (formerly in the genera *Michelia* and *Magnolia*), diverse oak relatives such as *Castanopsis* and *Lithocarpus*, evergreen maples and a whole string of genera that are unfamiliar at best and previously unknown to horticulture: *Bretschneidera*, *Dipentodon*, *Exbucklandia*, *Huodendron*, *Sinopanax*, and *Sloanea*, to name a few. Other genera such as *Daphniphyllum* have had their diversity in cultivation greatly increased, while genera known as indoor plants have produced some surprisingly tough hardy species, *Schefflera* being a notable case.

The Sino-Himalayan region is vast, providing many frontiers on which to explore. In recent years Taiwan has been a popular destination, yielding both evergreen and deciduous species of great garden value, while Vietnam has become recognized as another hotspot. The mountains in the north, such as Fan Si Pan and elsewhere in the region round Sapa, are just

*Lithocarpus kawakamii*, an evergreen species native to Taiwan, growing at Tregrehan in Cornwall.
high enough and just far north enough for their plants to have a sporting chance of being hardy in milder areas. One of its special trees is what is known as *Aesculus wangi*, although the name is technically invalid, which produces nuts 10 centimeters (3.9 inches) across—they are a trophy in themselves. Upon germination, seedlings rocket up to over a meter (3.3 feet) within weeks. Its habit of coming into leaf early may be a problem, but the tree itself seems to be winter hardy in Britain, at least.

Strange though it may seem, Australia was the next most prolific source for recent tree introductions. This apparent anomaly can be explained by the single genus *Eucalyptus*, although there are several *Acacia* and *Callitris* species plus odds and ends from other genera too. Although of negligible interest in much of the area covered, *Eucalyptus* has a devoted fan club in the milder parts (maritime Europe, the Pacific Northwest). These enthusiasts have been searching out populations in the coldest part of each species’ range, a classic example of intelligent plant-hunting, unlike the usual grabbing of material from the first population found. Whether or not such sourcing has done them any good after a series of hard winters in both of these regions remains to be seen—many eucalypts have been devastated. As they grow so fast, however, it won’t be long before we see another crop appearing. *Eucalyptus nitens*, the shining gum, holds the record for the fastest-growing tree in Britain, achieving 20 meters (65.6 feet) in six years in Oxfordshire, making a splendid-looking tree in that time, but alas, it was killed last winter.

Mexico has also been an important destination for plant explorers in recent decades. With its huge diversity of ecosystems this is hardly surprising. Conifers and oaks are the two most important groups of Mexican trees for temperate gardens, but there are hardy *Cornus, Crataegus, Fagus, Platanus,* and *Tilia* too. It is always astonishing to think of “temperate” genera occurring in the tropics, but there are hardy *Magnolia,* and rainforest maples and oaks are diverse in southeast Asia. Half the diversity of *Juglans* (walnut) is found in the Neotropics! Most of these tropical species are too tender for temperate horticulture, but this shouldn’t prevent experimentation with species along the tropical fringes. Many Mexican evergreen oaks are proving to be remarkably tough, and even if they are defoliated by a severe winter will usually resprout next spring. Of all the new trees I studied for the book I was most impressed by *Quercus rysophylla,* an evergreen oak with big leaves that emerge red or bronze, and which forms a stately and handsome tree, hardy in western Europe, the southeastern United States, and the Pacific coast. Experts continue to discover new species of oaks in the United States and Mexico, usually isolated on obscure mountain ranges. One such is *Q. acerifolia,* from a few mountains in Arkansas, a handsome red oak with excellent autumn colors. Liberated from its native habitat it is proving to be versatile, succeeding across the northern and eastern United States, including in the Arnold Arboretum.

In general, trees from Chile and New Zealand are for specialist growers in mild moist climates, and one has to be bold to grow any African woodies: even species from the most temperate parts of South Africa and the high mountains of East Africa are very tender. But in the right conditions it is fun to try—and even...
outside the right conditions too. Only by pushing the boundaries can we ascertain true hardiness limits, and although there will be many failures there will be some very welcome successes. In this period of climatic uncertainty and increasing pest and disease problems we need diversity to ensure our gardens remain vibrant with interesting trees and constant experimentation is the way forward. *New Trees*, published in 2009, documents a period of intensive exploration for plant material that at least equals the efforts of earlier generations, and provides a reference point for the future from which success or failure can be judged.

Working on this project and writing the book was an immense privilege and the appreciation it has received makes it even more worthwhile. I am only one player in the team, though, and the book could not have been written without the help of dozens of dendrologists around the world, the support of the sponsors and the IDS and the sterling efforts of my co-author Ross Bayton and artist Hazel Wilks. The editing and layout were done by the incomparable Sarah Cannon, with technical assistance from Lloyd Kirton at Kew Publishing. These latter-end stages are when the really hard part of writing any book comes, when it is being edited and put together as a volume, and deadlines are flying towards one. The ultimate deadline was the launch, a grand reception in London planned by the IDS with a set-in-stone date of May 19, 2009. The last changes were made to the text on March 30, and the finalized proofs were delivered to Kew next day, giving us six weeks. I call that brinkmanship, but the German printers stuck to their timetable and the books reached England with a week to spare. That was a relief.

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