

Oaks in a Difficult Climate – Arboretum de la Bergerette

Shaun Haddock

shaun.haddock@orange.fr

For upwards of twenty years I have been planting oaks at the Arboretum de la Bergerette in southwest France, during which time at least 200 species of oak have already been trialed outdoors, and approaching 50 more species await planting. The trees have come from many sources, including notably the first introductions to Europe of several species from Mexico (where they seem able to manufacture oaks at will), commenced in 1995 by Allen Coombes. There are also many collections of my own, often from IOS tours; from IOS seed exchanges; from Ron Lance; and more recently, additions from Beatrice Chassé and Thierry Lamant.

La Bergerette lies at a north latitude of just under 44°, which is that of central Oregon, USA, and Florence (Firenze) in Italy – thus in mid-June the fierce sun is at the same height here as at the equator. Rainfall averages around 600mm per year, usually with a dry period during the hot season which, as in 2003, can be of extreme severity (situated halfway between the Mediterranean and the Atlantic, it is no surprise that both tree rings and weather records show an oscillation between harsh «Mediterranean» and more moderate «Atlantic» summers on an eight to ten year cycle). The heat is often coupled with our «poor man’s Mistral», the Vent d’Autan, which can blast up from the Mediterranean at 40°C («like a hairdryer», as I used to describe it, until someone uncharitably replied «How would you know?»).

This provides «destruction testing» particularly for the trees planted on the dryer and more open plateau at the top of the property, where, to give the drought context, even in a «normal» summer trees like *Gymnocladus dioica* (L.) K. Koch, *Catalpa speciosa* (Warder ex Barney) Engelm. and *Toona sinensis* (A. Juss.) M. Roem. will defoliate without extra water, whilst *Lagerstroemia* L. and *Albizia julibrissin* Durazz. will abort their flowers and shrivel. From the plateau, there is a soil moisture gradient on northeast and northwest-facing slopes down to two intersecting valleys, which in places remain moist in summer. Winter temperatures vary enormously, but almost every year there is at least one night when the temperature plunges to -7°C. Although this is colder than usual winter minima (ignoring the last two winters!) in the UK, it is positively offset by the good ripening of young wood in the summer heat.

Soils vary, but tend to be neutral, clay-based and thus poorly drained, and often with pebbles.

Michael Heathcoat Amory’s splendid book *Oaks of Chevithorne Barton*, apart from its scientific interest and photographic beauty, assists as a very useful guide for that frequently asked question, “Which oaks do I plant if I have room for only a few?” in temperate climates typified by northern Europe. Whilst space in the Journal precludes discussion of every oak growing at La Bergerette (many of which, incidentally, come from the same sources as Michael’s trees), I felt it might

be useful to try to give similar guidance for the more difficult (for trees) climate of southern Europe (and perhaps a future climate-changed northern Europe!), both in terms of ease of cultivation and of ornamental value. I think that we oak collectors contain in varying proportions the “stamp collector” and the plant lover: the latter is possibly the stronger trait in me, as I would rather see a common oak growing well than a rarity looking bilious (the ideal being, of course, a rare oak doing well!), so my comments will relate equally to well-known species.

It is a truism to say that it only takes one extreme event to kill a tree, and any plantings made before December 2001 have endured the cold winter of that year (down to around -11°C or lower, with two weeks below 0°C), the extreme drought of 2003, and more recently, in January 2009, the catastrophic Hurricane Klaus. I thus append the planting date to the tree names below.

A word here on cultivation – most of my oaks were planted small, sometimes at only 10 centimetres in height, from deep pots with air-pruning bases, so that the roots were in balance with the top growth (but this rule I confess to have broken where hardiness was not assured). For many years I successfully used black plastic as a mulch to aid establishment, but recently I have become involved in an escalating arms race with the mammals with which I share the property: voles and moles have taken to burrowing under the plastic, both uprooting the plants and, by bulging the plastic, throwing vital rainwater to the edge rather than to the tree at the centre. This has almost precluded planting such small trees, and also I now use organic mulch in order to see more easily what is going on – however more weed control is thus required (I am not ashamed to use Glyphosate).

Every young plant requires protection against rabbits, for which I use a cylinder of chicken wire, usually wrapped with horticultural fleece for at least the first year to give shelter from wind and direct sun (providing also a useful, albeit unattractive, visual marker for those most in need of watering during establishment). Proprietary tree guards would do the same thing. With the change to organic mulch the rabbits evolved a new technique of digging under the wire from the side and uprooting the plants – so now a flat plate of mesh is also required to surround the plants at soil level. So don't get me started on (choose your own expletive) rabbits! Once the tree is growing out of the top of the rabbit guard, a taller wider cylinder of stronger wire grid is needed against the Roe deer, and for tender subjects this can also be covered with fleece for winter protection in their early years.

Finally, this year has seen a spectacular and disfiguring increase on both white and red oaks of a leaf-miner which causes the entire upper surface of affected leaves to peel off. It has tentatively been identified by Wisley as the larval stage of the moth *Acrocercops brongniardella*. I await next year with trepidation – I would neither wish nor would it be possible to spray against these on the scale required.

In discussing the oaks, as drought is the most limiting factor here I shall start on the plateau, the driest area, and work downhill. My intention has been where possible to plant trees where they would be most likely to survive on the moisture gradient, but as the valleys are also frost pockets, a few trees find themselves in overly dry soil due to presumed lack of hardiness, notably the Himalayan *Quercus leucotrichophora* A. Camus (Nov 1995 and May 1996, 3.6 and 4.7 metres in 2008). A beautiful tree with its dark serrated leaves sporting almost white undersides, it can certainly take the heat, as a large tree grows on the



Quercus rysophylla

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French Riviera at La Serre de la Madonne, Menton (almost on the Italian border), but probably benefits there from subsurface water. Here it survives but looks sad without additional irrigation.

Of five examples of a second Himalayan oak, the extremely spiny *Q. baloot* Griff. (Sep 1996), collected from two different altitudes, none have done well here, even one irrigated plant, so it is hard to know how to make this species happy. However, a third species, *Q. floribunda* Lindl. ex A. Camus (May 1995), has seemingly grown best on the plateau (there are two others elsewhere), making a conical tree of 6 metres by autumn 2008 (the last time the trees were

professionally measured). All three of these species I was lucky enough to collect in the mid nineties in the Swat valley, northwest Pakistan. Although if I used a guide he would always tote a Kalashnikov, the (human) population at that time were extremely friendly and hospitable with the marked exception of the young boys in the religious schools. These I suppose grew up to spearhead the valley's recent takeover by the Taliban, triggering a subsequent counter-attack by the Pakistani army – sadly the area is off limits to Westerners for the foreseeable future.

Two plants of *Q. ithaburensis* Decne. (Mar 2003) grow very slowly, and two of their lovely tactile grey-felted-leaved subspecies *macrolepis* Hedge & Yalt. (Nov 2003), from seed collected after the IOS tour in Turkey, have outgrown them. This latter (sometimes, as encouraged in the Oak Names database, found labelled as a separate species, *Q. macrolepis* Kotschy) is a must-have for those with space (up to 25 x 25 metres eventually). Perhaps in part in reaction to the hot summers here, these wild-collected plants are every bit as ornamental as the cultivar 'Hemelrijk Silver' (but then I would say that, as my grafted plant of the latter promptly died). Sadly, although the ornamental acorn-cups have formed, they abort during the summer long before attaining their potentially enormous size of up to 9.5 centimetres (yes, really!) across the extended cup scales.

Another Cerris-section oak, *Q. libani* G. Olivier (Nov 1992), grew steadily for years (to over 6 metres in 2008) in soil made dust-dry by an enormous fastigiata *Populus nigra* L., which finally blew down in the 2009 hurricane (a life-affirming event for *Q. libani*, less so for the *Q. ilicifolia* Wangenh., now regrowing, whose misfortune was to be in the poplar's path). The closely related and more visually interesting *Q. trojana* Webb would I am sure tolerate drought just as well, but my plants are all further down the hill, where the leaves on trees from two provenances in Turkey (Oct 2002) all temper to a beautiful grey in the heat (*Q. libani* stays green). Younger plants from an Italian provenance have smaller, rounder, greener leaves with more pronounced venation.

Prone to mildew, a group of three *Q. infectoria* subsp. *veneris* (A. Kern.) Meikle (Nov 1997) from Cyprus have nevertheless made attractive grey-green-leaved trees, and others further downhill have grown even faster. However, the beautiful Golden Oak of Cyprus, *Q. alnifolia* Poech (May 1999), makes headway only very slowly. Coming from the Troodos Mountains, it would probably benefit from irrigation here. Other shrubs include *Q. coccifera* L. (May 1999) and its subspecies. *rivasmartinezii* J.H. Capelo & J.C. Costa from Portugal (Jan 2002, the largest just over 2 metres), both growing densely but slowly. A more interesting-looking plant is *Q. aucheri* Jaub. & Spach (Nov 2003), with greyer leaves and a more sparse habit showing off pale stems.

On the tour after the California IOS conference in 1997 I was entranced by the blue oak savannahs we saw, with widely-spaced *Q. douglasii* Hook & Arn. above golden grass (this species, according to Peattie (1953), in popular tradition "shies from water like a mad dog!"). I had already planted three of them in Nov 1996, and I hastened to add thirteen more from the seed I collected. Well, the grass goes golden as it should, but the largest blue oak had reached only 2.5 metres by 2008. Perhaps this will be a project rather for the next generation? These oaks can also be subject to mildew.



Quercus affinis

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Another blue-leaved Californian, a *Q. engelmannii* Greene was planted on the plateau in Nov 1993. To say that it grows would be something of an overstatement; it has been retrenching over the last few years (a *Q. chrysolepis* Liebm. in the same area was cut right back in the 2003 drought also). A visiting enthusiast thus remarked that Mediterranean oaks seem to do much better here than Californians, but, as a statement, that would need qualifying. *Q. agrifolia* Née (Nov 1992, 6.2 metres in 2008) and *Q. wislizeni* A. DC. (May 1996, 7.3 metres in 2008) have done well enough only just over the lip of the plateau, but, significantly, in part shade. Equally a healthy young *Q. engelmannii* (May 1999) much further down the slope has made over 3.5 metres, next to a *Q. kelloggii* Newb. (Jun 2000) of over 5 metres in 2008. This latter tree has been one that I have had the most difficulty in establishing, having planted half a dozen or more, but finally the sole survivor is growing well.

But back to the plateau: the Californian shrub oaks *Q. berberidifolia* Liebm. and several *Q. pacifica* Nixon & C.H. Mull (Nov 1997) have made sizeable bushes (one of the latter 3.2 metres high by 4.9 m wide in 2008) which fruit every year. Nearby two dwarf oaks, Chinese *Q. monimotricha* Hand.-Mazz. (Sep 2000) and suckering *Q. lusitanica* Lam. (Mar 2003) provide drought-proof ground cover. *Q. durata* Jepson (May 1996) plods on extremely slowly, not at its happiest here. Meanwhile, *Q. john-tuckeri* Nixon & C.H. Mull. (May 1999) makes a rangy but bomb-proof grey-leaved shrub.

To move away from California, the slow-growing red-listed *Q. hinckleyi* C.H. Mull. (May 1999) from Texas thrives and fruits (but unfortunately with pollen from the native *Q. pubescens* Willd.), and shows beautiful pink new growths against its tiny grey-blue evergreen leaves – a must-have if you can find it. One of the most ornamental oaks of all is represented here only by young plants: *Q. hypoleucoides* A. Camus. The narrow evergreen leaves with the occasional asymmetric lobe to add interest are white underneath; the plants have (so far) grown vigorously, and the young growth is purple. What more could one ask? (Even the leaf-miners agree). There is an array of other shrubby species from California and southern USA which are as yet young and need to prove themselves.

Five more Americans on the plateau deserve a mention, firstly *Q. grisea* Liebm. (Jun 2000), from a Mike Melendrez collection, has grown into a characterful rugged-looking small tree, and strangely it has grown taller (4.2 metres in 2008) than one planted in March 1999 on the moister hillside next to a *Q. arizonica* Sarg. for comparison. *Q. grisea* I think makes a more interesting tree, with smaller leaves and a more irregular outline. *Q. myrtifolia* Willd. (Nov 1999) has defied drought to make an attractive evergreen shrub of 2.5 metres. I received seed at an IOS seed exchange labelled *Q. prinoides* Willd. (planted May 1999), but when it shot upwards with a clean straight trunk I started to have doubts. Guy Sternberg has now identified it as *Q. muehlenbergii* Engelm., but what is extraordinary is that, in soil already parched, it has continued to make strong growth (4.2 metres in 2008) in close root competition with two larger trees, a *Pinus radiata* D. Don and a *Q. pubescens*.

Perhaps not surprisingly, several *Q. virginiana* Mill. planted nearby were wiped out in 2003, and only one of two survivors has since made any headway. Lastly, out of an avenue of 24 *Q. rubra* L. (in normal climates an easy and biddable oak) planted in March 1991, those where I had allowed *Prunus spinosa* L. to grow around them were killed in the 2003 drought, those standing alone survived (I have taken this lesson on board!). Again this year (2011) in extreme autumn drought the leaves on more than half these trees are brown at the end of September – given another life I would plant *Q. coccinea* Münchh. or *Q. velutina* Lam. instead, but they were not easily available in those (unimaginable) pre-IO days.

Moving over the rim of the plateau, one is made pleasantly aware that most of the deciduous North American oaks are almost as drought-tolerant as the native *Q. pubescens* and *Q. petraea* (Matt.) Liebl. here. A clutch of them were planted just over the edge of the plateau in November 1995, including *Q. ellipsoidalis* E.J. Hill, *Q. imbricaria* Michx., *Q. coccinea*, *Q. marilandica* Münchh., *Q. velutina* and *Q. shumardii* Buckl., most of which had reached 8 metres by 2008 – *Q. coccinea*



Quercus acutifolia

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a little more, *Q. marilandica* a little less. *Q. stellata* Wangenh. (now just over 4 metres) and *Q. margaretta* (Ashe) Small, planted at the same level in Nov 2003, equally defy drought. If the season proves exceptionally dry the first two start to shed leaves in a controlled manner starting with the oldest, followed in time by *Q. velutina*, but I have never seen the other three suffer even in 2003, although *Q. shumardii* benefits here from midday shade.

Q. velutina is one of my favourite oaks, with its large pendulous glossy leaves giving great visual interest and life to the tree. By chance it is planted next to *Q. marilandica* (another great favourite, with visitors also), with which it often hybridises in the wild giving *Q. ×bushii* Sarg. Sadly, many of the trees of *Q. “marilandica”* one sees on sale and in collections in Europe are probably a first or second generation of this or another hybrid, with extra lobing on the “duck’s foot” leaves. The plant here, thankfully, is true, and produces a yellowish indumentum

which, like velvet, produces hologram-like effects with change of light.

Further down the hill *Q. palustris* Münchh. has formed a classically-shaped example with lower branches angling to the ground, but, despite its position with (slightly) more moisture, one day in August 2003 all the leaves simultaneously turned greyish and shrivelled, whilst continuing to hang on the tree. This is normally a fatal sign, but, with the autumn rains, a few buds burst green, and the following spring, to my great relief, the tree leafed out normally. This species, though most unsuitable for such a dry climate, is the most commonly planted oak in the Cape region of South Africa (perhaps with the exception of *Q. robur* L.) – I would imagine a case of historical accident of introduction.

At the same level as *Q. palustris*, the most extreme *Q. macrocarpa* Michx. I have (Nov 1992, 7.2 metres in 2008), with deep elm-like fluting on even the young bark, also starts to shed leaves in severe drought. Other species of the eastern USA red and white deciduous oaks grow successfully farther down the valley side, with only *Q. bicolor* Willd., *Q. phellos* L. (Nov 1993, a beautiful tree 10.4 metres tall in 2008), *Q. texana* Buckl. (syn. *Q. nuttallii* E.J. Palmer) and *Q. lyrata* Walter (this particular specimen now suspected of being *Q. macrocarpa*) being mollycoddled in the valley bottom.

Just below the first-mentioned group of eastern USA oaks, and thus still in a dry environment, there were some unexpected results amongst the Mexican and Tex-Mex species. Untroubled by cold or drought since its planting in October 1996, the Mexican oak formerly known as *Q. eugeniifolia* Liebm. (now *Q. delgadoana* S. Valencia, Nixon & L.M. Kelly if from Mexican provenance, as here) had reached 8 metres by 2008 despite knowing neither frost nor drought in its cloud-forest home – thus a splendid oak for Europe, with unlobed laurel-like evergreen leaves. Less successful were *Q. acherdophylla* Trel., *Q. canbyi* Trel. and *Q. polymorpha* Schltld. & Cham., all of which, though not killed, were cut back in 2003 and thus cannot be recommended for extremely dry areas (*Q. acherdophylla* never fully recovered, a young replacement grows fast but is watered in dry spells).

Q. canbyi is one of the most rapid-growing oaks of all when young – one from a collection by Thierry Lamant planted at the same time as several Mexicans in November 2008 has outstripped all the latter by far to reach over 4 metres already, but again with “emergency” watering. In the same area one of my favourite oaks, *Q. affinis* Scheidw., planted in November 1996, was killed outright in 2003. An older brother planted in the valley (Nov 1993) survived in the moister conditions, and at 10.5 metres in 2008 is apparently one of several species here which are the tallest in France. I love the glossy dark good health of the small leaves, and the tree here has made a narrow cone bizarrely mirroring the shape of a *Chamaecyparis* next to it.

But back to the hillside and another columnar tree: neat-foliaged *Q. crassipes* Bonpl. (May 1999) has grown steadily with midday shade, reaching 6 metres by 2008, untroubled by the climate. Just below, a *Q. suber* L. (Nov 1991), of course well adapted to drought, makes steady progress (10 metres in 2008), and would survive on the plateau. This specimen has grey leaves (conjuring up visions, as with *Q. douglasii*, of parched savannahs, this time in Spain) but green forms exist, and in either the bark makes an entertaining feature. Highly variable in leaf size



Quercus dolicholepis

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Quercus obtusata

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and colour of underside, *Q. ilex* L. fits into the discussion here – easy to transplant, drought tolerant, even capable of being clipped, this species is the workhorse oak of southern Europe.

Q. laceyi Small gets a good press everywhere except here, where it fails to do what it says on the packet. Both on the plateau (Jun 2000) and on the hillside (Dec

1998) it leafs out erratically, and sometimes the first flush of growth dies back completely (and this not due to frost). They usually manage to pull themselves together by the end of the season, and the older plant had reached over 4 metres by 2008, an open tree with flaking bark. Maybe, like some but not all other white oaks, it falls prey to whatever maladies are transmitted on the breeze from the natives here (and it is another frequent victim of mildew).

In this same area grows an oak on steroids, a wonder-oak labelled as *Q. graciliformis* C.H. Mull. (Dec 1998), from seed collected by Guy Sternberg from a tree later seen by participants at the 2006 fifth IOS conference in Dallas at the Texas A + M University campus. However, as *Trees of North America* gives the height of this species as 8 metres, and this specimen in ten years had reached 12.5 metres (Oct 2008), and appears to have more pronounced lobes than the type, a little hybrid vigour might be suspected. But, cold-proof, drought-proof and hurricane-proof, I wish I had more of them. There is an obvious affinity between this oak, *Q. canbyi* and the mysterious “Langtry Oak”, with their rapid growth and similar foliage (indeed, in *Guide Illustré des Chênes*, these three species and *Q. cupreata* Trel. & C.H. Mull. are seen as forming a continuum).

Also growing well in the same area are several other Mexicans, including three related trees: one *Q. acutifolia* Née (Jun 2000) and two collected from its natural hybrid nearby with *Q. mexicana* Bonpl. (Mar 1999), all around 8 metres in 2008. The latter two may have been backcrosses with *Q. acutifolia* pollen, as the leaves of the three are difficult to tell apart (although the habit differs). *Q. obtusata* Bonpl. (Nov 1996, 6.2 m in 2008) and *Q. subspatulata* Trel. (May 1999, also 6.2 m, 2008) unobtrusively get on with their business, as does shrubby suckering *Q. microphylla* Née (Jul 1999), which seems to have topped out vertically at under 3 metres. However, nearby is a gap where probably the only Mexican *Q. peduncularis* Née in France used to be (Oct 2004). Having withstood the regular -7°C for several winters, -8°C during the winter of 2009/10 proved just too much for it.

Conversely, *Q. conspersa* Benth. (May 1999 and Nov 2003), which tended to lose young growth in most winters, sailed through the 09/10 winter without damage. What fickle creatures oaks can be! Other Mexicans which had even shorter careers with an unhappy ending include *Q. lancifolia* Schldl. & Cham., *Q. planipocula* Trel., *Q. salicifolia* Née, *Q. sartorii* Liebm. under collector’s number PCH 350 (which turned out to be something else of limited hardiness – some young true *Q. sartorii* are now growing well), and *Q. uxoris* McVaugh.

Nearby a Chinese native intrudes between the Mexicans – *Q. franchetii* Skan. (Dec 1998). It has grown well, an open tree wider than high (5.7 x 6.4 metres in 2008) and clothed to the ground with leaves like a more rounded *Q. leucotrichophora* with similar pale undersides. Several other Mexicans planted in November 2008 grow in the area, and have thus survived the 09/10 winter, the most ornamental of which are *Q. castanea* Née and silvery *Q. crispipilis* Trel., the latter needing water to re-erect its leading shoot this dry summer.

In our descent, we are now about one third of the way down the hillside. Given that areas receiving 1000mm of rain a year are considered dry in Japan, no Japanese oaks are planted on the plateau, but nevertheless it has been a pleasant surprise to find how drought-tolerant several have proved to be at this level. In



Quercus franchetii

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particular the related cerris-section species *Quercus acutissima* Carruth. and *Q. variabilis* Blume, both with a wide far-Eastern distribution, have continued to grow rapidly through the driest of years; the latter, with the pale leaf undersides flashing in the breeze and bark eventually becoming corky (in some clones with attractive dark green young wood first), would receive my strong recommendation. The former often, but not invariably, takes on an ungainly shape, but one here (Nov 1991) provides the tallest of the oaks I have planted (13.7 metres in 2008).

At the opposite end of the size spectrum is the drought-proof evergreen *Q. phillyreoides* A. Gray, growing slowly but surely here into a neat and extremely dense wide-spreading bush, holds onto its leaves in the deepest shade and thus can make an excellent hedge (but I have seen this species in moister Japan as a tree).

To return for a while to the USA, evergreen *Q. nigra* L., the water oak, grows both at this level and in the valley (both Nov 1993). The valley tree is certainly larger (12.4 as opposed to 9.7 metres in 2008), but the upper tree has shown no sign of drought stress. However, on the downside both trees here have proved to be fragile, and often drop branches (*Platanus occidentalis* L. is another notorious widow-maker here, though apparently not elsewhere; and according to Peattie, *Q. douglasii* will be so too should the trees ever get large enough). Next door is a *Q. oglethorpensis* W.H. Duncan (May 1996, 4.7 m in 2008), which attractively throws out whorls of horizontal branches in the manner of a tree *Cornus* or, indeed, of *Q. emoryi* Torrey (Oct 2004, 3.5 m 2008). This latter species is one of the few red oaks with edible acorns; tales from Peattie of settlers burnt with their wagons at Apache Pass “of ghastly memory”, where this is the dominant tree,

make me shudder as I pass my plants.

Still at the same level grows the handsome cerris-section *Q. castaneifolia* C.A. Mey. (Nov 1992, 11.4 m 2008), a fast and neatly-shaped pyramidal tree which, when young, strangely displayed the “elephant bark” so remarked on when occurring on some Mexican species.

Several far-eastern Cyclobalanopsis oaks such as *Q. glauca* Thunb. (May 1999) and *Q. hondae* Makino (Jun 2000) have hung onto life through dry years further down the hill, but refuse to increase in size without extra water, *Q. myrsinifolia* Blume being the tougher exception. Otherwise Chinese oaks are not overly well represented here other than by their Japanese forms – I have already mentioned the tiny *Q. monimotricha* inching its way on the plateau and *Q. franchetii* in “Mexico”, but *Q. dolicholepis* A. Camus (July 1999, 4.4 m 2008) has made a splendid dense small tree with its round dark evergreen leaves retained well into its interior.

Q. longispica (Hand.-Mazz.) A. Camus, one of Roy Lancaster’s favourite oaks, took a while to get up steam after faltering in 2003, but is now launching its beautiful leaves with their golden undersides into the air on several stems. Both these trees are highly recommended – I had it in my mind that the latter was a shrub until I saw the photo of an enormous specimen in the equally enormous tome *Guide Illustré des Chênes*. *Q. griffithii* Hook. f. & Thomson ex Miq. (Nov 1999) similarly took a while to get going. Some more recent Chinese and Taiwanese plantings (Allen Coombes again!) are still too young to be assessed.

Other Cyclobalanopsis, such as *Q. oxyodon* Miq. and *Q. lamellosa* Small, have been tried too far up the hillside and disappeared without trace – I must try again risking the frosts below. Though not far-eastern, *Q. pontica* K. Koch is another species I have been unable to make happy in this dry climate (*i.e.* I have killed several).

Descending further to halfway down the hill, several of the wonderful *Q. rysophylla* Weath. weigh in, with their large glossy rugose and highly un-oak-like evergreen leaves. The largest (Nov 1997) was 11.6 metres by 2008 – over a metre a year! On Allen Coombes’ recommendation, several were planted together in search of that Holy Grail – true seed. A crop two years ago seemed to come true, and they are fruiting again this year. Another specimen in a dryer location grows less densely, but appears otherwise happy. Nearby grows a favourite, from seed received as *Q. georgiana* M.A. Curtis. It has been suggested that my plant is merely another *Q. nigra*, but unlike that species this is deciduous. It takes the same form as “classic” *Q. palustris*, with upper branches ascending and the lower ones sloping to the ground, but with its smaller leaves has a finer texture.

At this same level grow several “toughies”: *Q. buckleyi* Nixon & Dorr. (Oct 2001); another *Q. floribunda* (Oct 2001); *Q. geminata* Small (May 1997, which shows some twig dieback from time to time); and *Q. gravesii* Sudw. (Nov 1997: both this and *Q. buckleyi*, with their smaller leaves, display a more lively texture than most “reds”). However, three plants of the supposedly resilient *Q. rugosa* Née (Nov 1997) have been unsuccessful; the largest reaching only 2.4 metres after 11 years, the smallest being dead. I must try again in a different situation.

Spanish and Turkish oaks have been planted at a level slightly below the trees just mentioned where the slope flattens out a little, and understandably



Quercus graciliformis

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show no sign of drought stress. Particular favourites are the *Q. trojana* already covered, of which my own collections with the IOS have narrower leaves than a specimen given by the Karaca arboretum, giving a more lacy look to the plants. Several Japanese *Q. serrata* Murray survive at this level, and in wetter years can give good autumn colour. *Q. alba* L. is said not to grow well in western Europe, but here shows no problems, colouring a deep autumnal red even in dry years. Another “white”, *Q. montana* Willd. is a neat tough plant, and grows fast in the early stages. However, I struggle to make the California White Oak, *Q. lobata* Née (Mar 1999, only 2.7 m in 2008), content here, perhaps due to poor soil. A

youngster recently planted in a different area was killed by insect defoliation – the Fates don't appear to smile on this species. Further along *Q. falcata* Michx. grows well enough, also providing elephant bark (which then splits into flat grey plates) and autumn colour.

To a Quercophile, the most spectacular trees in the Melbourne botanic garden, Australia, are several *Q. canariensis* Willd. planted around 120 years ago – branching to the ground and making enormous cathedrals of substantial grey-green leaves. I say this in envy, as several trees here, some of Spanish and some of unknown provenance (the latter including my largest, planted May 1997, 4.8 m in 2008), have yet to make any sort of statement. I refuse to waste unrequited love on this species.

Now to hurricane Klaus. I have already mentioned the vulnerability of *Q. nigra*: in addition two white oaks were affected, but in contradictory ways. A compact plant of *Q. stellata* (Mar 1999) had slowly attained 3 metres by 2008 in an open position. It was completely snapped just above the base by Klaus. By way of contrast, a *Q. bicolor* (Nov 1993, 8.7 m in 2008) I am fond of grows in the valley. For the first week after the storm I was kept fully occupied along with Anke Mattern's professional team from Germany and a 26 ton tracked digger in re-erecting and cabling shelterbelt pines on the plateau (of which nearly all survived). When I finally visited the valley, there was no sign whatsoever of this oak! Eventually realisation dawned – with its tip bent to the ground it was completely concealed by a fallen 14 metre Leyland cypress. On cutting the cypress away, the oak returned half upright of its own accord – the root plate had not moved and neither had the trunk cracked. It was cabled fully erect again with the help of a tractor, the side branches returned to their normal positions (like a big “bendy toy”, they stayed exactly where they were put), and the tree has since carried on growing as if nothing had happened! But otherwise, apart from some trees tilted (and subsequently re-erected), the oaks fared remarkably well, unlike the pines and eucalyptus. I should add that Klaus struck after a (rare) week of heavy rain, which gave the roots no hold in the sodden ground. Thankfully, deciduous trees were bare, which certainly avoided more severe damage, but made the snapping of the *Q. stellata*, albeit somewhat marcescent, all the more surprising.

I must now draw to a close to escape an editorial bullet, although there are still oaks clamouring for discussion. But finally, I very much hope to be able to welcome all those of you who are able to join the IOS post-conference tour when it visits La Bergerette in October 2012.

References:

- Peattie, D. C., 1953. *A Natural History of Western Trees*.
Le Hardy de Beaulieu, A., T. Lamant, M. Timacheff, 2010. *Guide Illustré des Chênes* (seconde édition), tomes 1 and 2.
Heathcoat Amory, M., 2009. *The Oaks of Chevithorne Barton*.
Miller, H. A., and S. H. Lamb. 1989. *Oaks of North America*.