

# Oaks at the Hillier Arboretum

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The Sir Harold Hillier Gardens and Arboretum has long had a tradition for planting oaks. Occupying 184 acres near the village of Ampfield in Hampshire, southern England, it was founded in the early 1950s by Sir Harold Hillier who gave the Gardens to the Hampshire County Council in 1977. Sir Harold was interested in all woody plants but we know that oaks were high among his favourites and in his latter years he collected in many parts of the world, including the southern United States, Mexico, Japan and Korea. The oaks now form one of our 11 National Collections and contain some 150 species, about 70 cultivars, and many hybrids. Some of the more interesting and unusual recent introductions from North America include *Q. acerifolia*, introduced from the type locality in Arkansas by the Morton Arboretum in 1989. It is growing extremely well here and because of its moderate size and splendid autumn colour, could be recommended as an ornamental tree. Oglethorpe oak (*Q. oglethorpensis*), first came to us in 1978 as scions, and after being grafted onto English oak (*Q. robur*), has grown slowly. We also have younger plants from wild-source seed but cool summers here result in frost damage to the young shoots in winter. *Q. myrtifolia*, introduced by Sir Harold from sand dunes on the Gulf Coast of the Florida pan-handle, is surprisingly hardy here.

In the last few years we have introduced many species from Mexico, but as yet these are largely untried outside. Several Mexican species survive here from earlier introductions, however. In 1979, Sir Harold visited Mexico for a few days and was remarkably successful in finding seed. His introductions of *Q. hypoxantha* and *Q. greggii* from Cerro Potosi, were probably the first to this country, and remain very rare, but both species are proving hardy. *Q. hypoxantha* produced several good acorns this year and we will wait with interest to see the progeny of these. It is another of Sir Harold's collections, however, that is causing great interest here. Sir Harold did not actually collect the first introduction of the magnificent Loquat oak (*Q.*

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*rhysophylla*) because in 1978 he received seed from his nurseryman friend in Alabama, Tom Dodd. Lynn Lowrey had collected this above Horsetail Falls, near Monterrey (Nuevo Leon, Mexico). However, Sir Harold visited the site the following year and made another collection. Although only 20 years old, one of these trees is already about 35 ft tall and the largest of this species in Britain. It produced its first acorns a year ago.

While we are actively seeking new hardy oaks from Mexico, another rich area that has been neglected is China. With more than 120 species, relatively few of them in cultivation, there is great opportunity for new introductions. Two particularly interesting evergreen species that have been introduced recently, both by Roy Lancaster, are *Q. longispica*, collected at 3,800 m in W Sichuan, and *Q. monimotricha*, from 2,700 m in NW Yunnan. *Q. longispica* is related to the better known *Q. semecarpifolia*, a large and fairly hardy evergreen tree, which the cultivated plant was originally thought to be. When it started to flower and fruit, however, the remarkably long peduncles showed it to be *Q. longispica*.



Photo by A. Coombes

*Quercus oglethorpensis* W. H. Duncan, a rare oak from the southeastern United States, shown in cultivation at the Sir Harold Hillier Botanic Garden and Arboretum in Hampshire, England.

*Q. monimotricha* is the smallest oak we have, making a low mound about a foot tall so far, with small, spine-toothed leaves. An interesting point about these species is that they both produced acorns when young plants, and seem to come true from seed without hybridisation.

Rare in cultivation, probably because of the difficulty in obtaining seed is the Golden oak of Cyprus, *Q. alnifolia*. This is a relative of the European Holm oak, *Q. ilex*, but is restricted to the mountains of Cyprus. A small, evergreen shrubby tree to about 15 ft or so, this very ornamental species is characterised by a mus-

tard yellow felt on the underside of the leaf. Even nearer to home is a shrubby semi-evergreen species, *Q. lusitanica*, from Spain and Portugal. Because of confusion with other species, this is rare in gardens and seed under this name will often produce a large tree. We do appear to have a plant, however, which was received under another name. Eliot Hodgkin collected seed in Spain and believed his plant to be a form of *Q. pubescens*, a large, deciduous tree. Harold Hillier, showing typical enthusiasm to



obtain a new plant, collected scions from the original introduction and they were grafted. The resulting plant, now about 5 ft tall and 10 ft across, is typical *Q. lusitanica*, and has already borne fruit. It is now being propagated from seed to discover whether it will hybridise with other species.

Knowledge of whether a species will or will not hybridise if raised from seed is important, as collectors are (or should be!) wary of garden collected seed, and most species, given the chance, will probably cross with something else. With the difficulty in propagating oaks vegetatively, it is therefore advantageous if a species can be safely seed-raised from a cultivated plant.

In my opinion, hybrids have great value in gardens, both for their ornamental features and botanical interest. As we all know, many hybrids occur naturally, and as such, they are just as important as their parent species. Some of



Photo by A. Coombes

*Quercus lusitanica* Lam (syn. *Q. fruticosa* Brot.), a shrubby oak species from the Mediterranean region, shown in cultivation (the large mounded plant at center) in front of the Jermyns House at the Sir Harold Hillier Botanic Garden and Arboretum in Hampshire, England.

the work we are doing in Mexico involves raising seedlings of trees that are suspected hybrids. Many other hybrids, of course, only occur as a result of species being brought into contact in gardens, and are only of use, or interest (in botanic gardens at least) if their origin is known. Where an exotic species crosses with a native one, the result may be an increase in vigour, hardiness or both. The hybrid between *Q. pontica* and *Q. robur* (*Q. x hickelii*), has the advantage of being much more vigorous and a larger plant than *Q. pontica*. It does not have the large, bold leaves of *Q. pontica*, but the original tree at the Arboretum des Barres in France, shows that it can make a fine specimen.

Other species frequently grown in Europe that commonly cross with *Q. robur* include *Q. macranthera* and *Q. canariensis*. It is not too difficult to spot these in the first generation but back crosses would be not as distinct. If an exotic oak hybridises here it is usually easy to

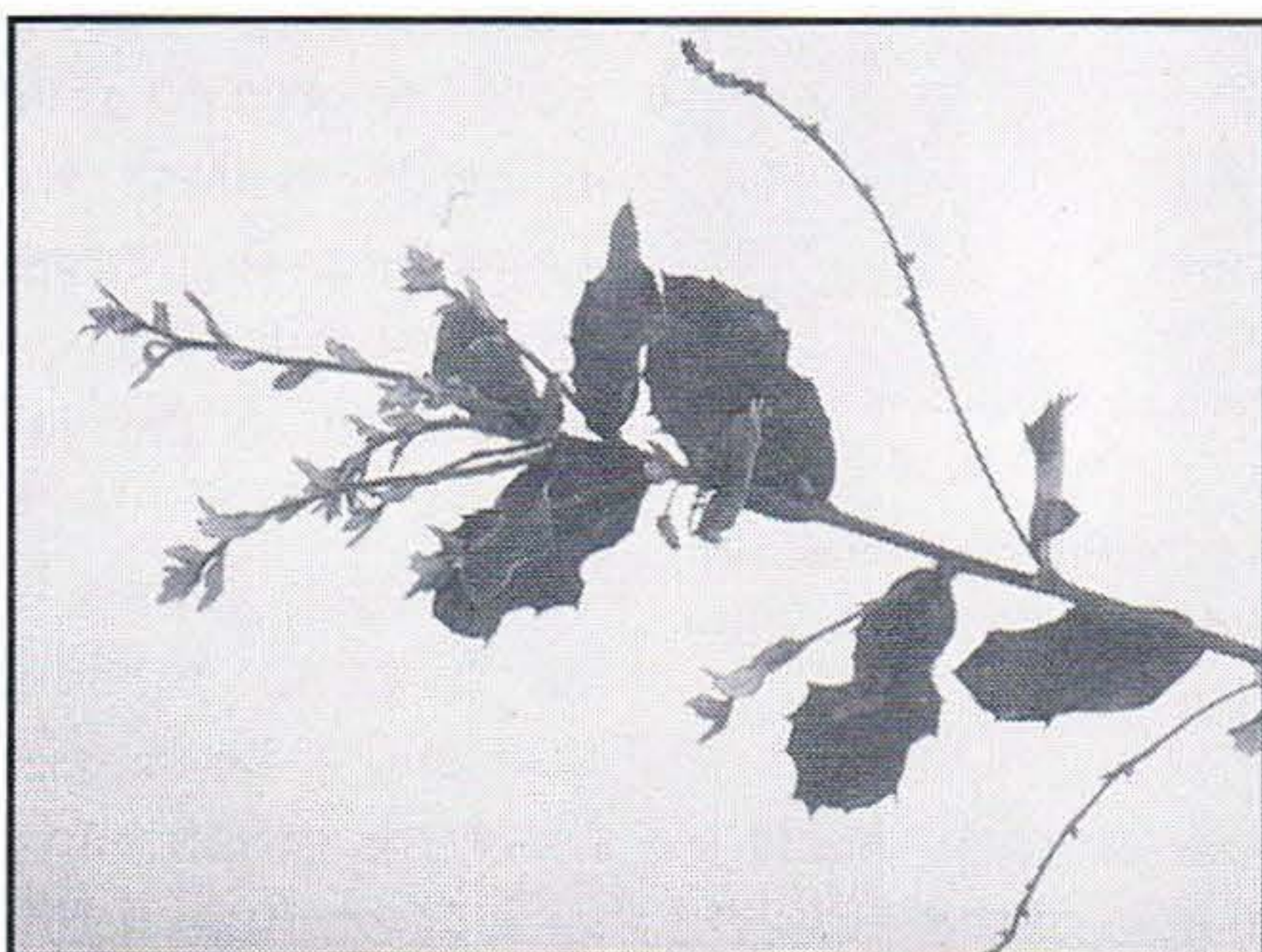


Photo by A. Coombes

*Quercus longispica* A. Camus showing new spring growth and the long flower catkins for which the species was named.

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determine the other parent. The white oaks will normally cross with *Q. robur*, except for the relatives of *Q. cerris*. There has been some debate in this country on whether *Q. robur* and *Q. cerris* cross, but I have yet to see a specimen that definitely proves it, and as both are very common trees in this country, it seems unlikely that they do hybridise. We recently raised seedlings here of several exotic species which bore fruit. *Q. macrocarpa* appears to have produced only hybrids with *Q. robur*. *Q. castaneifolia*, on the other hand, crossed exclusively with *Q. cerris*.

Seed received from North American gardens may give plants which are more difficult to determine. A plant originally grown as *Q. macrocarpa* here seems to be a hybrid with *Q. alba*, while a tree originally called *Q. hypoleucoides* appears to be a hybrid with *Q. emoryi*. We are already getting hybrids of Mexican oaks arising in gardens. Indeed there is

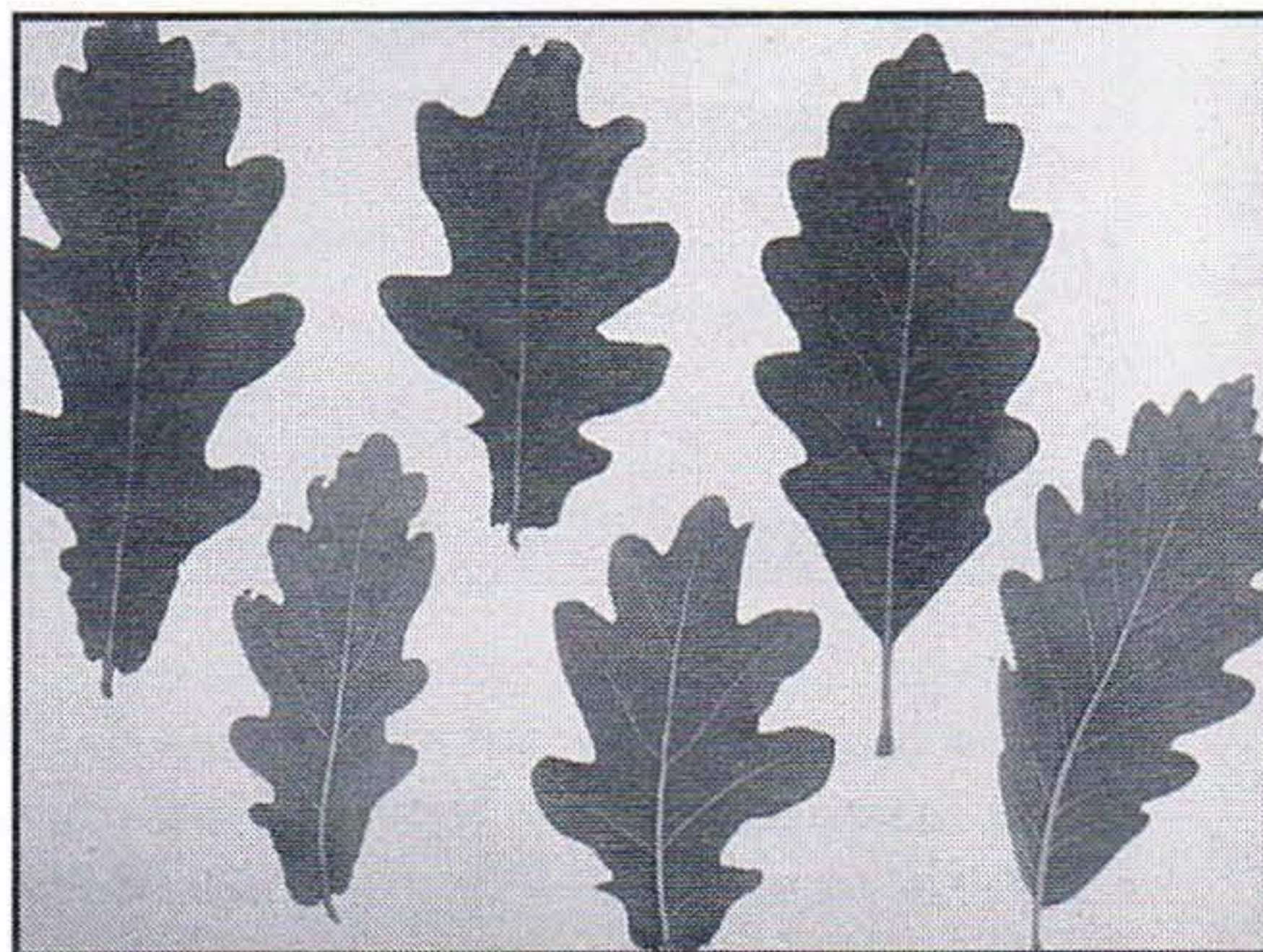


Photo by A. Coombes

*Quercus macranthera* x *Q. robur* (left) with the parent species *Q. robur* L. (center) and *Q. macranthera* Fisch. & C.A. Mey. ex. Hohen (right).

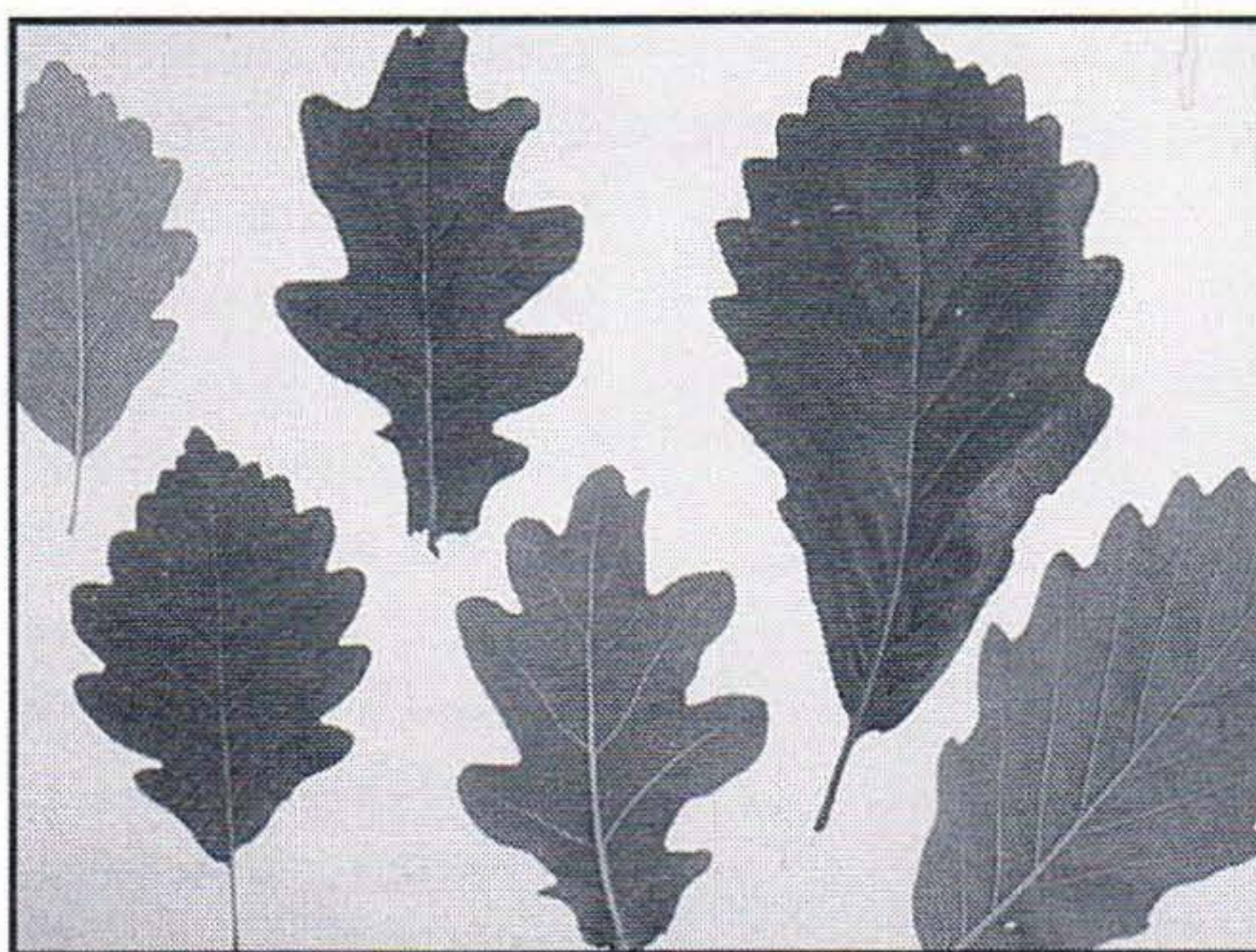


Photo by A. Coombes

*Quercus canariensis* x *Q. robur* (left) with parent species *Q. robur* L. (center) and *Q. canariensis* Willd. (syn. *Q. mirbeckii* Durieu) (right).

source seed, made me doubt the origin and I eventually discovered that it came from a cultivated source in Texas. It may not be possible to determine the other parent of this tree, but seedlings raised recently from one of our *Q. rhysophylla* trees appear also to be hybrids.

one probable hybrid that has been in cultivation for many years. *Q. warburgii* was described in 1939 from a plant that had been grown in this country since 1870. It was raised from seed received from Italy as *Q. rugosa* but was later thought to be *Q. obtusata*. In my opinion it is a hybrid of a Mexican species with *Q. robur*. Judging by the long fruiting peduncles produced by *Q. warburgii*, I suspect *Q. rugosa* of being the other parent. We should therefore expect any seed of cultivated source to give hybrids, unless we know there is a reason to doubt this. A specimen sent to me recently of *Q. rhysophylla* grown in an English garden, and said to be of wild