*Quercus acutissima* (Japanese chestnut oak, sawtooth oak)

This is one of two oaks planted just to the northern end of the middle of Orchard car park probably in the mid 1990’s. The leaves of this oak are very like those of the sweet chestnut (*Castanea sativa*) hence the common name. It is native of China, Korea and Japan. This is a medium to large deciduous tree, expected to reach 25m at maturity. It has simple, alternately arranged leaves, the young twigs are green, becoming light brown in the second year. The leaves are glossy green on both surfaces, darker above. The petiole is up to 25mm or so, pale green. The lamina is generally linear to lanceolate, although quite variable including some that are falcate, up to 15cm long by 35-40mm across, with pinnate veins (up to 18 pair) clearly seen on both surfaces. The margin is coarsely serrate with each serration extending to a forward pointing bristle of 2-4mm. Male and female flowers are produced separately on the same tree (monoecious), the male in drooping yellow catkins, the female flowers are small and inconspicuous. Acorns ripen in the second year, they have a scaly cupule and enclose the nut by two thirds or more. The acorn is about 25mm long. The bark is dark grey and fissured eventually.
Quercus cerris  (Turkey oak)

There are a number of Turkey oaks on campus, notably at the southern end of Burns wing and a few amongst the oaks in the grassed area near the Computer Centre. These trees are probably over seventy years old and are among the larger trees on campus. Turkey oaks originate from Southern Europe to South West Asia. The trees are broad and round headed at maturity with stout ascending branches from a dull dark brown - grey, deeply fissured trunk. The leaves are alternately arranged, simple, oblong to lanceolate with seven to nine triangular to lobulate lobes. Leaves can be variable, but are about 100mm long by 40mm across with a petiole of up to 20mm. The leaves are a dull dark green above and paler below, each lobe generally has one or more spiny projections. Male and female flowers are produced separately on the same tree, the male flowers in long pendulous catkins, the female flowers are usually between one and three in the axils of new leaves. Neither male nor female flowers have perianth parts. One of the most distinctive features of Turkey oaks are the acorns that are about 25mm long in a scaly 'birds nest' like cup that encloses about one third of the acorn.
Quercus coccinea  (scarlet oak) *

It is quite difficult to ascertain the difference between pin oaks and scarlet oaks. Two Memorial trees have been planted one in honour of Bert de Graf a long time gardener at Lincoln University and the other to Vera Ostash a student of Lincoln University. The Memorial tree for Bert de Graf is on the western side of Hudson Hall toward the northern end in the lawn. This tree was planted in April 2001 with a small ceremony including staff and Bert’s family in honour of his time at Lincoln. The Memorial tree for Vera Ostash (1976) is planted near the entrance on the eastern side of Forbes. The scarlet oak is a large tree from the southern parts of Canada and the north eastern USA. It has attractive autumn foliage. Four other trees were planted in the staff car park to the north of lecture rooms 12 and 13, two of which were blown out in a storm. I have seen others in the city blown out at the same time. For windy areas it might be better to choose the similar looking pin oak that seems less susceptible.

* Closer inspection suggests all these trees are probably pin oaks or possibly hybrids with scarlet oaks. The trees north of rooms 12 and 13 colour up most closely to scarlet oaks, but for most characters fit pin oaks best. (See Quercus palustris (pin oak).)

Memorial tree to Bert de Graf a long serving member of the Grounds staff

Deeply divided simple, alternately arranged leaves that colour up to scarlet shades in autumn.
Quercus ilex  (Holm oak)

There is a large evergreen shelter belt that runs in a north – south direction between the rugby fields on the east and on the western side the womens cricket to the north and Nursery complex to the southern end. This shelter has been double planted and trees set about a metre apart, the lower 2-3m of the shelter has been cleared to the trunk. The trees at the northern end are around twenty metres or so in height and have been trimmed at the southern end to allow light into the glasshouses. This species is tolerant of clipping and appears to be excellent for shelter or for a large evergreen hedge. The leaves are alternately arranged and usually 8-9cm long by 2-3cm across with a petiole of between 1-2cm. The leaves are more or less ovate to lanceolate or elliptic, they are leathery and can be entire (adult) or sharply toothed (juvenile form). The species is monoecious with male and female flowers on the same tree. Male flowers are in yellowish-grey catkins, female flowers are usually separate or in clusters up to three, developing into the typical acorn fruit of a cupule and nut. The cupule encloses about half of the nut, the fruit is approximately 2cm long. The Holm oak is native to the Mediterranean area.
Quercus laurifolia  (laurel oak)

This is ultimately a deciduous (semi evergreen) oak native to the south eastern parts of USA. It is a tree given to me by Dieter Steinegg an arboriculturist for the Christchurch City Council. This tree is in the south western block of magnolias in the Amenity area. It has simple, alternately arranged leaves that are variable in shape, mainly obovate or oblong, occasionally elliptic in shape. The margin is slightly lobed in the upper part, leaves are shiny green above and below, slightly paler beneath. Twigs are reddish-brown with numerous white lenticels obvious. The lamina is approximately 70-100mm long by 30-40mm across, the petiole is about 8mm, petiole and main veins are yellowish. This tree is in the southern block of trees in the Amenity area toward the western side amongst a group of magnolias, it was planted about the mid-late 1990's.
This particular tree is situated by the main steps of Hilgendorf facing the Forbes Building. There are however many other examples of this species on campus. The pin oaks are good hardy trees and do well at Lincoln. They originate from eastern parts of USA. This particular tree is interesting in that it has had some major work carried out in the late 1970’s by Bruce Hill and myself to remedy a split in the trunk that was about 3m long. The tree was rotten in the centre of the trunk and split on two sides. The tree had the rotten wood removed and was cleaned back to sound wood, it was then then disinfected, bolted together, with four very large galvanized bolts, from one side of the trunk to the other, with each bolt offset from the one below. The cavity was then filled with two liquids which when combined and mixed created foam polyurethane. This was then trimmed after a brief period of time to harden and then covered with a rubber protective coat and painted black. Since then the tree has recovered quite well, but some branch removal is carried out occasionally to reduce some of the weight of the crown. This tree was planted around the time that Hilgendorf was completed and has a prominent position beside the main entrance steps. Normally cavities are left open these days, unless the tree is in a particular site where filling might be appropriate. This tree currently needs some branch removal work to lighten the crown.
Quercus palustris x Q.coccinea hybrid

Whilst this tree tends more to the appearance of the scarlet oak in terms of form and autumn colours, certain characters such as the size of the cupule in relation to the nut (acorn) are more like those described for the pin oak.

Leaves simple, alternately arranged deeply lobed with 7-9 lobes, each with a small bristle at the end, nuts are enclosed by cupules by only about 20% at the base, typical of pin oaks.
**Quercus robur** (English oak)

There are a number of examples of the common English oak on campus. This is a large deciduous broadleaf species.

North side of Gillespie.

unusual form of the English oak planted to commemorate Joan Mahoney near the south eastern end of Hilgendorf wing.
*Quercus robur* 'Fastigiata'  

Fastigiate cultivar of English oak north of Hilgendorf

Leaves typical of English oak, simple, deeply lobed, alternately arranged, often clustered towards the tips of the twigs.
This oak opposite the north of Stewart building is one of the larger deciduous trees on campus. It is probably a hybrid between the English oak (*Quercus robur*, Europe to Western USSR) and the Algerian oak (*Q. canariensis*, North Africa and Iberian Peninsula, not the Canary Islands as the common name suggests). One of the features that makes this tree different from other English oaks is that this tree holds on to its leaves well into July, long after most other deciduous species have shed theirs. There is one other oak tree with the same parentage and of a similar age near the gates at the eastern entrance to the Lodge. It is thought these trees were probably planted around the late 1940’s. This oak is a very large tree with a rounded top, probably more upright than the common English oak, it also appears to have more vigour. There are many other species of oak on campus and include some large examples of the Turkey oak (*Q. cerris*), many examples of the North American pin oaks (*Q. palustris*), some red oaks (*Q. rubra*), the evergreen Holm oak (*Q. ilex*) and a few examples of other species *Q. laurifolia* and the scarlet oak (*Q. coccinea*).
Quercus rubra  (red oak)

These are large deciduous trees that produce good autumn foliage colours. They are native to North Eastern USA and E. Canada. These trees are good planted as a lawn specimen. They have a broad, spreading crown with a rounded top. The trunk has a smooth, light silvery grey, or light brown – grey coloured bark, as it ages becoming more fissured. Leaves are alternately arranged, usually elliptic to obovate, with four to five angular lobes on each side, each lobe, usually has secondary lobes, terminated by a bristle. Leaves are large, usually about 200 -250mm long by 150mm wide, with a reddish petiole of about 50mm. Leaves usually colour up to dull reds or yellow brown colours in the autumn. Acorns are variable in size up to 30mm long with a sharp point at the apex and are set in a shallow cup with smooth scales. There are a few examples on campus of this species, the largest of these is in the border midway, opposite the west side of Hudson, others were planted in the 1980’s north of Forbes, a younger example planted in the early 1990’s is seen on the lawn to the north of the eastern end of the Library. Some are also planted in Orchard car park