

## *Nothofagus moorei*

Martyn Rix & Andy Jackson Head of Wakehurst Place

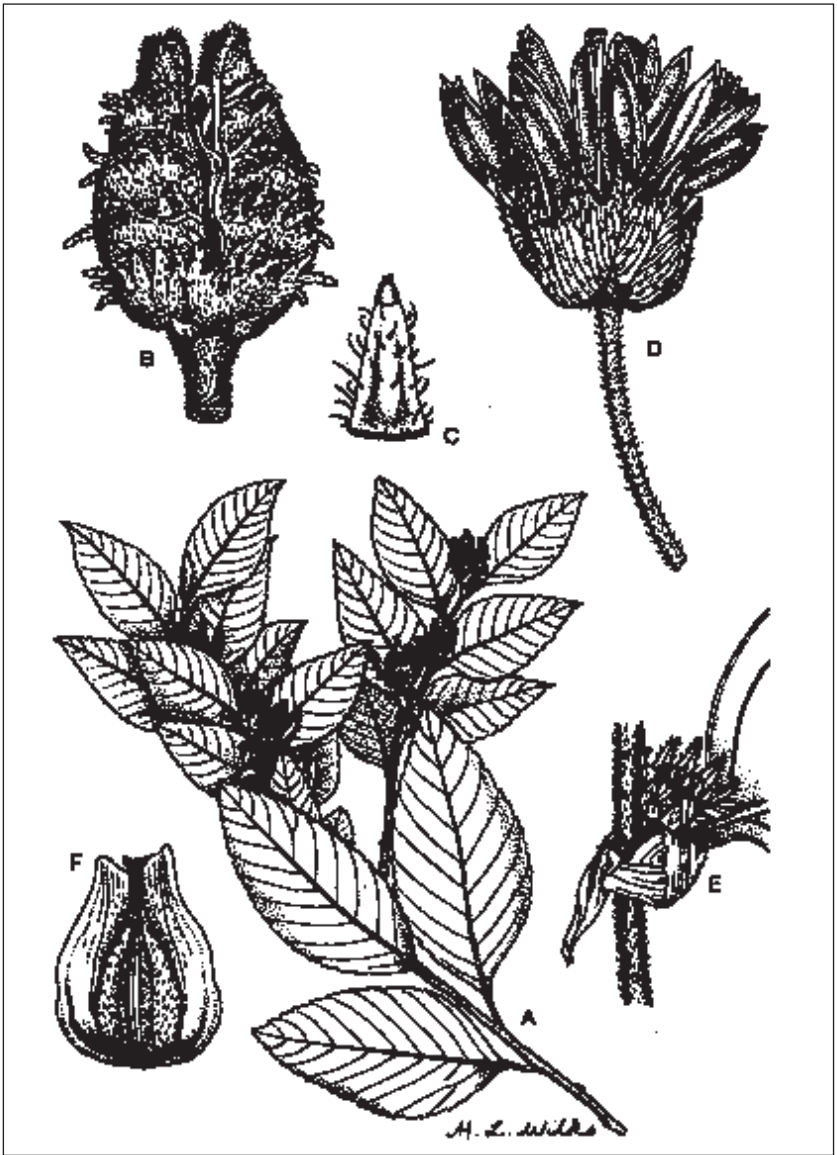
Of the 34 known species of the genus *Nothofagus*, nine are found in Chile and Argentina, three in New Zealand, and three in Australia; the remaining 19 come from New Guinea and New Caledonia. *Nothofagus* are commonly called Southern Beech and are evergreen or deciduous trees or shrubs with simple or less often lobed leaves. The flowers are often solitary and unisexual flowers and the small fruit, with three flattened nutlets are produced in a Beech-like capsule which has four lobes with glandular, tooth-like appendages on the outside.

Because of the similarity of the leaf and fruit, many were first described as species of Beech, *Fagus*, and the name *Nothofagus*, meaning false beech, was published by Blume in 1851; Desmond Clarke, in the 8th edition of Bean (1976), suggests that Blume meant to call the genus *Notofagus*, meaning southern Beech, but the H was inadvertently inserted in the name.

*Nothofagus* has been the subject of many studies as a representative of a Gondwana genus, i.e. one found in the ancient southern continent before it split up, in this case surviving in South America and Australasia, but having become extinct in South Africa (Linder & Crisp, 1995). Pollen of several species has been found in Tertiary deposits in southern Australia and other studies have suggested that the genus is at least 83 million years old (Hill & Read, 1991).

Although traditionally placed in the family Fagaceae, along with beech and oak, recent studies have suggested that the similarities with Beech are superficial and that the genus is closer to the Corylaceae, and particularly to *Corylus* or *Carpinus*. A new family Nothofagaceae was proposed by Lyudmila Kuprianova in 1962, and is upheld in the recent *Flora of New South Wales* (Harden, 2000), but has not yet been widely accepted.

*Nothofagus moorei*, illustrated overleaf, is one of the three Australian species and is restricted to south-eastern Queensland and north-eastern New South Wales. Here it grows in cool temperate rainforest above 600m, reaching 1550m at its highest, from the Barrington Tops and the headwaters of the Manning River, north to the Macpherson range along the Queensland border. It is often found along the edges



*Nothofagus moorei*. A, fertile branchlet showing leaves and cupules,  $\times 2/3$ ; B, cupule, with appendages,  $\times 5$ ; C, gland-tipped appendage,  $\times 20$ ; D, stalked cluster of male flowers with stamens,  $\times 5$ ; E, female flower in leaf axil, with reflexed stipules,  $\times 5$ ; F, nut,  $\times 5$ . A, from Benth. 211; B, C & F from L. Durrington 1393; D, from G. Guymer 22; E, from Blake 19072. Drawn from specimens in the Herbarium, Royal Botanic Gardens, Kew, by Hazel Wilks.

of creeks, and old trees are reported to be particularly crooked and gnarled, the bark rough and porous, laden with ferns, orchids and other epiphytes (Maiden, 1922). In some areas it is the dominant species in the forest. Herbarium specimens show that the large leaves, as seen on young trees now growing at Wakehurst Place in Sussex, are typical of juvenile shoots sprouted from the bole, or of twigs on shaded branches; leaves on flowering shoots are smaller, 3.5-5 cm long. Young shoots and leaves are often red, and the oldest leaves may colour before they fall. On young shoots the long, lanceolate stipules are conspicuous, but they soon shrivel and drop as the shoot matures.

*Nothofagus moorei* was named after Charles Moore (1820 - 1905). Moore was born in Dundee, and after studying at Kew in 1847, took up the post of superintendent of the Botanic Garden in Sydney, which he held from 1848 to 1896. Moore found this *Nothofagus* in 1865 and called it *Fagus carronii* after William Carron, a collector employed by Sydney Botanic Gardens, but this name was published later than Ferdinand Mueller's name *Fagus moorei*. Moore is also commemorated in *Eucryphia moorei* F. Muell., a shrub or sometimes a large tree with pinnate leaves, again from New South Wales, but from further south.

Some of the earliest recorded cultivated specimens of *Nothofagus moorei* in Europe are from the Botanic Garden in Glasnevin, near Dublin where Moore's elder brother David was curator from 1838 until 1879, when he was succeeded by his son, Sir Frederick Moore, who died in 1950. As well as to Glasnevin, *Nothofagus moorei* was introduced to Kew in 1892, where it was grown in the Temperate House. It was also planted outside in several particularly mild gardens such as Caerhays and Trewithen in Cornwall, at Fota in Co. Cork and at Mount Usher in Co. Wicklow. A tree at Caerhays was 17 m tall in 1971 (Clarke, 1976). The current *Tree Register of the British Isles* records a tree at Mount Usher which is now 16 m tall, with a diameter of 47 cm.

The young trees now growing at Wakehurst were collected by David Hardman and Andy Jackson (the author) on 29th February 2000, in the Barrington Tops National Park, in the Moppy Lookout rest area at 1320 m, with thin soil over basalt. The field notes describe it as the dominant tree in the area, with an understorey dominated by *Trochocarpa* (Ericaceae), and a ground layer with ferns such as *Blechnum*, and *Dicksonia* with *Berberidopsis beckleri*, a second species in the genus, related to the well-known *B. corallina* from Chile.

*Nothofagus* is one of the genera of which Wakehurst has an excellent

collection, designated a National Collection by the NCCPG; as described by Greta Fenston (p.56) groves of several species have been planted recently in Coates Wood beyond the Millenium Seed Bank, and there is a large, old specimen of *N. cliffortioides* in the southern hemisphere garden.

### **Cultivation**

The requirements of *Nothofagus moorei* in cultivation are not yet fully understood, but growth at Wakehurst has been excellent on a gentle sunny and sheltered slope in moist soil. Moisture, shelter and good drainage would seem to give the best chance of establishing young trees. Propagation is generally by fresh seed, but is also possible by cuttings of firm young growth (Elliott & Jones, 1997).

*Nothofagus moorei* (F. Muell.) Krasser, Ann. K. K. Naturhist. Hofmus. 11:161 (1896). Synonyms: *Fagus moorei* F. Muell., Fragm. 5:109 (1866). *Fagus carronii* C. Moore ex Benth. Fl. Austral. 6:211 (1873).

### **Description**

Tree to 50 m, often with a massive trunk surrounded by coppice shoots and with rough, corky bark. Leaves 2-ranked, evergreen, leathery, glossy and more or less glabrous, ovate, toothed, 5 - 10 cm long on vigorous shaded or coppice shoots, 3.5 - 5 cm long on mature or flowering shoots. Petioles 3 - 5 mm long. Stipules conspicuous on young shoots, often reflexed, narrowly lanceolate, 8 - 10 mm long, caducous. Male flowers in stalked clusters of 5 -7, formed below and maturing before the female flowers. Female flowers more or less sessile, 3 together and surrounded by an involucre of bracts. Ovary 3-locular. Cupule 8 - 10 mm long, and covered with bristly, sticky, gland-tipped processes, opening by four valves. Nuts small, narrowly winged.

### **Distribution**

Eastern Australia, in New South Wales and the extreme southeast of Queensland.

### **Ecology**

Often dominant in temperate rainforest, particularly along creeks at 600 - 1550 m.

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The line drawing is by Hazel Wilks, who may be contacted c/o The Herbarium, RBG Kew.

## **Ex Situ Conservation**

An article on *The management of 'Ad Hoc' Ex Situ Conservation Status species at the Royal Botanic Garden, Edinburgh: a review of options*, by Elizabeth Radford, Michael Dossman & David Rae appears in the first edition of *Sibbaldia*, an occasional series of horticultural notes from the RBGE. In this, the conservation value of random plant collections amassed and maintained over a long period of time, as against those collected (often recently) and maintained specifically for clear conservation objectives, is discussed. Some of the general points raised, such as the importance of accurate record keeping, and of conserving plants of known wild origin, may be of interest to owners of 'amateur' collections. For further details, contact the editor, Dr David Rae, Director of Horticulture, R.B.G. Edinburgh, or visit [www.rbge.org.uk](http://www.rbge.org.uk). *Sibbaldia* is for sale at £4.99 (UK postage £1.20 per copy), and can be ordered from the Publications Department, RBGE, 20 Inverleith Row, Edinburgh EH3 5LR, Tel 0131 248 2819 or by email: [pps@rbge.org.uk](mailto:pps@rbge.org.uk).