

CanterburyNature

Species Profile: Tree Nettle

Urtica ferox

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Taxonomy

- **Scientific name:** *Urtica ferox* (J. G. A. Forster)
- **Popular Common names:** Tree Nettle, Ongaonga
- **Kingdom:** [Plantae](#)
- **Phylum:** [Magnoliophyta](#)
- **Class:** [Urticopsida](#)
- **Order:** [Urticales](#)
- **Family:** [Urticaceae](#)
- **New Zealand Status:** native (endemic)
- **Taxonomy sources:** Hoogland and Reveal (2005); Webb et al., (1990); Webb et al., (1988).

Identification

Species Description

The tree nettle is a woody shrub that grows to two meters or higher (Webb et al., 1988; Allan, 1982). The trunk can get up to twelve centimetres in diameter. The numerous branches tend to grow interweaved (Salmon, 1980).




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Figure 1. *Urtica ferox* shrub. (Click on an image for the full caption.)

The pale green leaves are arranged opposite each other (Connor, 1977; Allan, 1982). The shape is ovate- triangular to lanceolate-triangular with pointed ends. The edges are deeply and coarsely toothed (Connor, 1977). Those teeth can be up to one centimetre long. The leaves are about eight to twelve centimetres long and three to five centimetres wide (Allan, 1982). Stipules grow at each leaf axis, which are like small leaves without a stalk (Salmon, 1980).

The veins, edges and stalks of the leaves (Connor, 1977) as well as the branches and flowers (Salmon, 1980) are covered in numerous stiff stinging hairs (Figure 2). Those stinging hairs are about six millimetres long and have sharp pointed ends (Connor, 1977). When touched the stinging hairs break and release a toxic substance which causes a prickling-burning sensation (Connor, 1977) (further detail in 'Significance to People' section). The *Urtica*


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ferox plant is, apart from the long stiff stinging hairs, covered with countless smaller, softer hairs (Salmon, 1980; Webb et al., 1988).




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Figure 2. *Urtica ferox* leaves. (Click on an image for the full caption.)

The tree nettle is a dioecious plant which means that the female and male flowers occur on separate plants (Connor, 1977). Several small pale greenish flowers (Webb et al., 1990) grow together on spikes which can get eight centimetres long and are coming from the leaf axis (Salmon, 1980). The fruit of *Urtica ferox* is a one and a half millimetre long ovoid, brown nut (Salmon, 1980).

These nettles, like all Urticaceae, have strong fibres and clear juice (Webb et al., 1990).

Similar species

That the *Urtica ferox* is a woody shrub is unusual for this genus; this makes it easy to distinguish from other nettles (*Urtica*) which are all herbs (Webb et al., 1990; Allan, 1982). Another characteristic are the comparatively long and stiff stinging hairs found alongside the veins of the leaves (Connor, 1977).

Geographic Distribution

New Zealand range

Urtica ferox grows on the North and South Island of New Zealand as well as on Stewart Island (Webb et al., 1988). In Allan (1982) the distribution is limited to the area south of latitude 35 degrees, as well as on the east side of the divide on the South Island. Salmon (1980) on the other hand states that the nettle can be found only west of the main divide. In Poole and Adams (1990) the distribution of *Urtica ferox* reaches as far as east Otago.

Tree Nettle plants can be found between coastal and lowland regions up to 600 metres above sea level (Allan, 1982; Clark, 1993; Poole and Adams, 1990; Wardle, 1991; Webb et al., 1988; Webb et al., 1990).

Natural History in Canterbury

Habitats

One typical habitat for The tree nettle is temperate bush (Wardle, 1991). The temperate broadleaf bush in lowland areas, where *Urtica ferox* can be found, includes stock-damaged bush, scrubland and forest margins (Allan, 1982; Wardle, 1991). The nettle also grows in bush on steep and unstable slopes (Wardle, 1991). Another habitat is open patchy vegetation on primary surfaces such as shingle beach or slope debris. On slope debris The tree nettle can grow to thickets on bush margins (Wardle, 1991).

Preferred Habitats

For growing, the nettle requires fertile soils and well lit places such as tree fall gaps or forest margins. But it can also grow in more shady conditions (Burrows, 1996). Like other *Urtica* species The tree nettle grows well in soils with high nutrient levels, in particular nitrogen (Wardle, 1991).

The woody shrub can resist temperatures down to minus eight degree Celsius (Burrows, 1996). In winter it drops its leaves in colder districts and exposed sites (Burrows, 1996; Wardle, 1991). Another occasion when the plant can lose its leaves is during droughts, especially on shallow sites (Burrows, 1996).

Phenology

Urtica ferox flowers from November till March. The pollination of the separate growing female flowers happens through wind (Webb et al., 1990). The fruits develop and ripen between December and May (Allan, 1982). Figure 3 shows what the flower/ fruit spikes look like.




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Figure 3. *Urtica ferox* spikes. (Click on an image for the full caption.)

The seeds of *Urtica ferox* germinate best when they are exposed to light and the soil around them is wet enough. Light conditions require that the seeds are not covered in leaf litter, which is the case in winter or spring after their dispersal (Burrows, 1996).

Predators

In the ecological system *Urtica ferox* plays an important role in the lifecycle of the red admiral (*Brassaris gonerilla*), an endemic butterfly (Barron et al., 2004, Webb et al., 1990). The tree nettle provides food and protection for the butterfly larvae (Barron et al. 2004). Therefore the shrubs can get defoliated by the red admiral caterpillar (Brockie, 1992). Furthermore another butterfly, the yellow admiral (*Vanessa itea*) also lays its eggs on the *Urtica ferox* (Brockie, 1992).

Several browsing mammals feed on The tree nettle including the brushtail possum (*Trichosurus vulpecula*) (Cowan, 1990), goats (*Capra* species) and deer (Cervidae family) (Brockie, 1992; scientific animal names from Allaby 1991).

Commensalism

Because of its dangerous stings *Urtica ferox* provides protection for young plants like Fuchsia (*Fuchsia excorticata*), a species in decline, from the reach of herbivores (Brockie, 1992).

How to find a Tree Nettle

The tree nettle can be found more or less all year round at scrub and forest margins in the lowlands (Allan, 1982; Wardle, 1991). It is easier to identify it in summer, when it has not lost its leaves (Burrows, 1996; Wardle, 1991). Altogether it has no eye-catching features as it is not colourful other than green with tiny, unattractive flowers (Webb et al., 1990). Nevertheless the wanderer should watch out not to run into the woody shrub as this can have painful consequences (mentioned in more detail in the 'Significance for people' section) (Clark, 1993; Connor, 1977).

Abundance and Conservation Status

- New Zealand: abundant
- Canterbury: abundant

Poole and Adams (1990) state that *Urtica ferox* is a common plant in New Zealand. The tree nettle can resist animal browsers and is therefore able to remain as part of the forest plant community (Brockie, 1992).

I could not find any published information about the plant's status in Canterbury. It grows vigorously at places where the required habitats still exist in Canterbury, such as on Banks Peninsula (personal observation).

Significance for people

The sting of The tree nettle can be very dangerous for human as well as for animals (Connor, 1977). There are several cases known where horses and dogs have died after the contact with *Urtica ferox*. Connor (1977) also reports about the death of one man after being severely stung by The tree nettle. Some possible symptoms which can occur after touching the nettle, especially multiple times, are listed in table 2.

Table 1 Possible symptoms after contact with *Urtica ferox*. Adapted from Clark (1993) and Connor (1977).

Time after contact	Symptoms
immediately	painful, burning sensation numbness
15–20 minutes	abdominal cramps strong burning sensation in feet visual blurring
60–90 minutes	weakness, exhaustion confusion pale skin sweating salivating cramps breathing problems loss of eye sight problems to keep the body warm problems to control movements of arms and legs

The effects of a Tree Nettle sting can last for about three days (Salmon, 1980).

The known toxic substances which can cause this reaction are acetylcholine, 5 - hydroxytryptamine (serotonin), histamine and others (Clark, 1993; Connor, 1977).

One treatment Maori created to relieve the pain from a Tree Nettle sting can be found in the article available at:

http://www.rsnz.org/archives/education/science_fairs/natfair96/02.html

[cited 9 September 2005].

Summary

This paper deals with the plant *Urtica ferox*; the commonly called Tree Nettle or Ongaonga. This is a woody shrub, unusual for the genus, and is endemic to New Zealand. The main characteristics are a mature growth height of more than two metres and the plant being covered in long stiff stinging hairs. These stinging hairs release a toxic substance which causes severe pain when touched. It can be dangerous for animals as well as for people. It grows in light and fertile conditions such as forest margins. The tree nettle can be found in forest and scrubland in the lowland regions of North and South New Zealand.

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