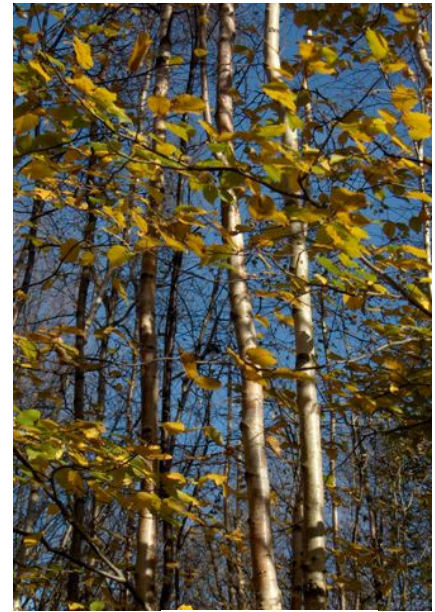


# November

## Weather Report

The start of November continued as October had finished - prolonged sunny spells, light northerly breezes and very pleasant daytime maximum temperatures of between 14-16 C. On the evening of the 5<sup>th</sup> there was a period of heavy drizzle but then three more sunny days followed,

temperatures typically reaching 13 C. The wind strengthened through the day on the 8<sup>th</sup> with a short spell of heavy rain late afternoon. It suddenly felt as if winter had arrived.



12<sup>th</sup> November

A significant wind chill made the 12<sup>th</sup> November the coldest day since March 20<sup>th</sup>. There was frost at night on the 11<sup>th</sup>, 12<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup>. The 16<sup>th</sup> was a beautiful sunny but cold (8-9 C) day. Then the wind changed from a northerly to southerly direction and the weather became much more unpredictable with spells of blustery, squally showers or heavy rain until the 23<sup>rd</sup>, which was another beautiful, cold (6-7 C), calm, sunny day



Cold moon rising 22<sup>nd</sup> November

followed by a heavy overnight frost. Settled conditions prevailed, with light northerly breezes but no more frost, until on the 27<sup>th</sup>, winds from a southwesterly direction brought rain in the afternoon. November ended dull, damp, although surprisingly mild at 12-13 C. Up until the 12<sup>th</sup> there had only been 7.5mm of rainfall, but by the end of the month the total had reached 65.5mm.

# Extracts from Rodney's Diary

*8<sup>th</sup> November*



*Bark removed from uppermost logs before roof fitted.*

*All roof panels in place and all fitted and screws around edges before batteries died.*

*10<sup>th</sup> November*

*Remainder of screws fitted to roof panels, leaving only bargeboard trim to fit*



**12<sup>th</sup> November**

*Section of M25 from caravan, west to top corner, cleared and debris burnt. Majority of work involved clearing old wind blown trees around north- western corner. New track is wide enough for tractor and trailer to negotiate.*

**26th November**



*Approximately another 50 metres of M25 cleared continuing in a south- westerly direction from northern-most top corner. Three trailer loads of debris carted to picnic site and burned.*

*Conditions damp but not slippery and still no standing water in the pond.*



## Leaf fall

It is calm. Weak winter sunlight filters through the thinning foliage. Everything appears to be in soft focus as damp, heavy air hangs between the trees like smoke lingering from a bonfire. A strange scent wafts around, sweet but with underlying tones of impending decay reminiscent of overripe fruit.

The silence is broken intermittently as yet another golden shape floats down to add to the accumulation arranged in random patterns around my feet. They have not yet had time to dry, but are still flat, pliable, unfurled, and so the typical crunch associated with autumn leaves is absent. Instead my movements result in a swishing sound as if I am clothed in a multitude of fine petticoats.

Thousands upon thousands of discarded foliar forms surround me, that having fulfilled their productive purpose for the year, are now emitting a spellbinding luminosity. Circumstances and conditions have united to produce a phenomenon that can only be a fleeting transitory phase in the annual cycle of growth, death and decay.

A gentle breeze stirs breaking yet more tenuous bonds and leaves flutter and swirl as they descend to alight on the glowing carpet. All senses have been activated.

'Go on!' an inner voice urges.

'No one is watching apart from the ghosts of centuries past, and they understand.'

I throw up my arms and whirl slowly in the manner of a dervish, enclosed within the autumnal equivalent of a snowstorm shaker.

These are moments of pure unadulterated joy.

They are priceless.

Over the winter months deciduous trees shut down all but the most essential parts to exist in a dormant state until growth resumes in spring, and even as this occurs preparations are being made for autumn. At the base of each new leaf a layer of cells called the abscission or separation layer forms, through which small tubes pass allowing the passage of water and nutrients into the leaf, and after photosynthesis has taken place, sugars and carbohydrates back to the tree. Photosynthesis is the process whereby glucose is produced from water and carbon dioxide using light as an energy source.



Throughout the long daylight hours of summer the leaves make more glucose than the tree requires, so the excess is converted into starch and stored in the trunk.

The summer solstice marks the beginning of a very gradual process of senescence, an initiation of ageing brought about by decreasing day length first proved in 1925 by W. Garner and A. Allard at the US Department of Agriculture. The cells in the abscission layer begin to swell forming a cork-like material, its growth accelerated by minute amounts of ethylene that the plant produces. As the flow of fresh water and nutrients is reduced and then finally cut off, green chlorophyll is unable to be replenished, its fading and eventual disappearance allowing other colours to become visible that have been there all along, but previously masked. Shades of orange come from the presence of carotenoids and yellows from xanthophylls, both common pigments found in flowers, carrots and egg yolks.

At the same time as water and nutrients are being prevented from entering the leaf, magnesium, phosphates and other nutrients are being withdrawn to be stored in the trunk and roots. Sugars remaining trapped in the leaf that can no longer be broken down by phosphates,



produce red and purple water-soluble pigments called anthocyanins - potent anti-oxidants contained in many plants such as red apples and purple grapes. Species of maple in particular exhibit a spectacular show of red leaves in autumn.

The question of exactly why glucose is being 'wasted' to manufacture anthocyanin rather than being withdrawn and stored, is the subject of studies worldwide at present. Theories that the leaves may be protected against the harmful effects of light at low temperatures, or the pigments act as warning signals to insects tempted to use the tree as a host during winter, or even the possibility that anthocyanins seeping into the ground around the tree prevent other species growing in close proximity, are all being investigated.

Oak leaves contain a high percentage of tannin - a bitter waste product, and so are mainly brown or golden brown through autumn but a brown colouration can also be formed as the degradation of anthocyanins occurs.

When cells in the abscission layer finally form a seal between the leaf and the tree, cells in the top layer begin to disintegrate, effectively creating a 'tear-line' enabling the leaf to be blown off or eventually just fall. They are shed because the high cost of maintenance would far outweigh the benefits from photosynthesis, a process made extremely difficult in the low light availability and cold temperatures of winter in our climate.

Although the final colours depend to a large extent on the pH (acidity or alkalinity) of the sap, they are also determined by the

type and concentration of anthocyanins, levels of different ions, hormones, moisture and temperature. The weather patterns of 2007 contributed significantly to the abundance, brilliance and longevity of this year's autumnal display. The brightest leaf colours occur



when late summer is dry followed by sunny autumn days with cool nights because the brighter the light, the greater the production of pigments, the more intense the colours. A cool, wet summer during which two-thirds more rain fell on Kent and Sussex than expected in June, July and August encouraged an unusual amount of leaf growth. September, October and the beginning of November were generally very warm, dry and calm with no strong winds to blow the leaves from the trees or any frosts to encourage them to fall.

The typical autumn colouration of leaves on trees that grow in Long Wood is expected to be as follows:

Oak - brown / golden brown

Hornbeam - russet

Birch - yellow

Hazel - yellow

Hawthorn - brilliant - varying

Poplar - yellow / golden

Sycamore - yellow

Willow - light yellow

Maple - reds / oranges / yellow



A painting of leaves on the main ride  
Acrylic on paper