Pruning tree branches and treating subsequent wounds

AT most clubs, the greenstaff are hard pushed to carry out all the required maintenance and cultivation of turf, let alone attempt to keep trees in first-class condition. This means that often the only work carried out is the removal of branches to favour the growth of other plants.

By David Francis

Removing branches permits light to the grass and herbaceous undergrowth and also helps increase air circulation, which improves the turf's quality. Occasionally, other factors influence branch removal, such as preventing dead or unsafe branches causing damage to golfers and property, and also allowing access to golfers.

Pruning only out of necessity is probably no bad thing for trees, as the improper pruning of branches is one of the most damaging injuries they can have inflicted upon them.

The bark acts like a skin, protecting the inner wood from micro-organisms that can cause deterioration. A poorly made pruning wound can expose the heartwood of the tree trunk and it is often invaded by fungal organisms that can, in time, cause decay, instability and the tree's possible death.

In the past, it was recognised arboricultural practice to remove branches as flush to the trunk as possible and then to paint the wound with a proprietary sealant with the intention of protecting the wood until it had callused over.

However, research work carried out in recent years by Dr Alex Shigo of the United States Forestry Service suggests that trees are able to chemically set up boundaries of resistance against advancing fungal pathogens and prevent the fungal decay reaching the trunk. This wall of resistance appears to occur in the branch collar which, on most trees, appears where the branch joins the trunk.

The main problem in the past has been that the existing method of cutting branches flush to the trunk removed this branch collar and so removed the site of resistance to decay organisms. Hence, the fungal pathogen gained access into the heartwood of the trunk and the decay process began unchallenged. So, to apply these theories on a practical basis, the removal of branches growing from the trunk should take the following course.

First, as in any branch removal, the main weight of the branch must be removed before the final cut is made. The branch should be undercut approximately one third of its diameter (A). This will prevent the branch from tearing the bark away down the trunk. Then, several inches out from the undercut, make a top cut (B) down through the branch. This will remove the main weight of the branch, leaving you with a stub that must then be removed.

The final cut should be made just in front of the branch collar and not through it (C) and never through the branch bark ridge as this will expose the trunk's inner wood. Leaving this collar will result in the protective boundary being left intact and also a smaller wound to the tree than would result with flush cutting.

Theoretically, wound sealants were applied for a

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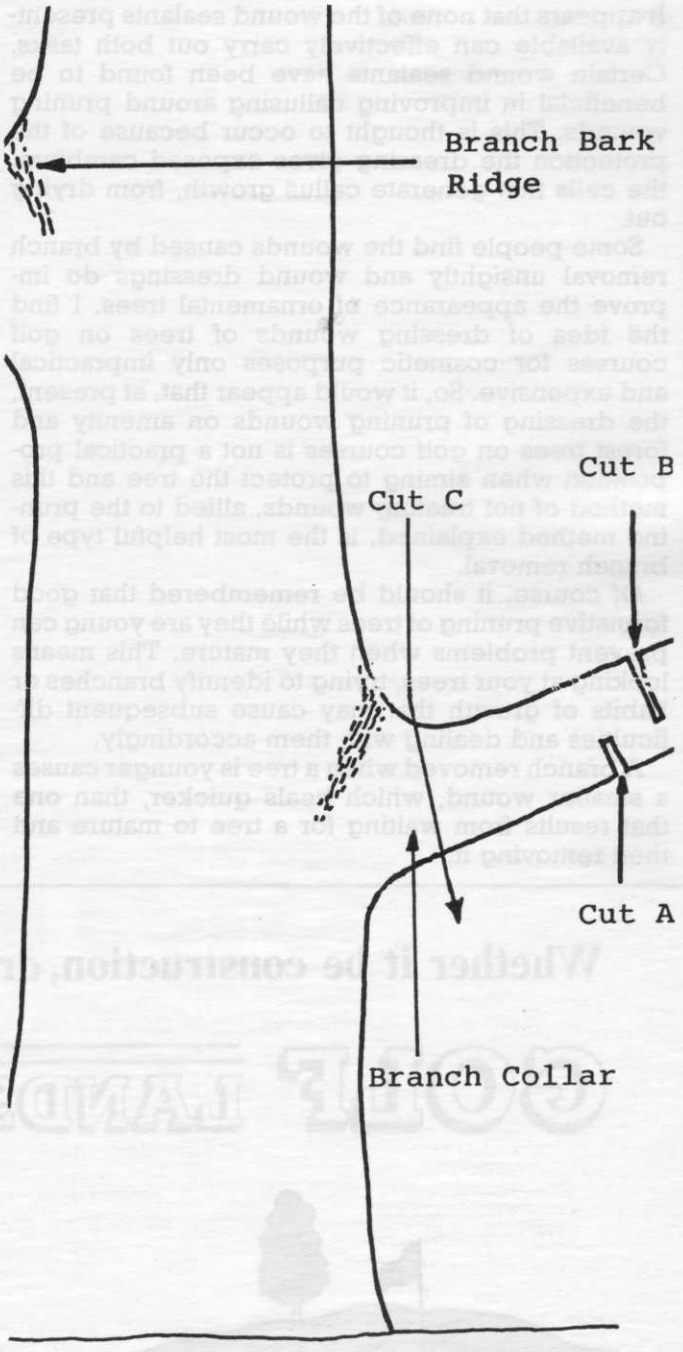

PRUNING CONTINUED...

number of reasons. It was thought they would act as a physical barrier over the exposed wood, preventing fungal spores from entering. However, various authorities have now suggested that fungal spores may infect the wood before the dressing can be applied and, in the long term, entrances for fungal spores can still appear as the sealant cracks or insects bore holes through it.

So, long-term protection is practically impossible at present. Applying wound sealants with fungicidal properties to chemically destroy decay fungi is also under question. A fungicide that effectively controls fungi already infecting the wound before application and that also gives long-term protection against decay fungi would be required. It appears that none of the wound sealants presently available can effectively carry out both tasks. Certain wound sealants have been found to be beneficial in improving callusing around pruning wounds. This is thought to occur because of the protection the dressing gives exposed cambium, the cells that generate callus growth, from drying out.

Some people find the wounds caused by branch removal unsightly and wound dressings do improve the appearance of ornamental trees. I find the idea of dressing wounds of trees on golf courses for cosmetic purposes only impractical and expensive. So, it would appear that, at present, the dressing of pruning wounds on amenity and forest trees on golf courses is not a practical proposition when aiming to protect the tree and this method of not treating wounds, allied to the pruning method explained, is the most helpful type of branch removal.

Of course, it should be remembered that good formative pruning of trees while they are young can prevent problems when they mature. This means looking at your trees, trying to identify branches or habits of growth that may cause subsequent difficulties and dealing with them accordingly.

A branch removed when a tree is younger causes a smaller wound, which heals quicker, than one that results from waiting for a tree to mature and then removing it.

Apprentice Corner

ANTHRACNOSE (Colletotrichum graminicola)

Although this disease usually affects Poa annua, it can also occur on various species of grass. It is easily recognised because the fungus produces a black lesion at the base of the sheath, which can be seen by removing the older sheaths. The whole root base turns black and the growing point is often destroyed. Shoots affected turn yellow with the youngest leaf turning red. However, the presence of the black lesion is particularly characteristic as the disease is often seen when the soil is very compacted. It follows that regular aeration should be carried out to prevent the build up of excessive compaction. Low fertiliser application is also associated with the incidence of this disease.

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Anthracnose.