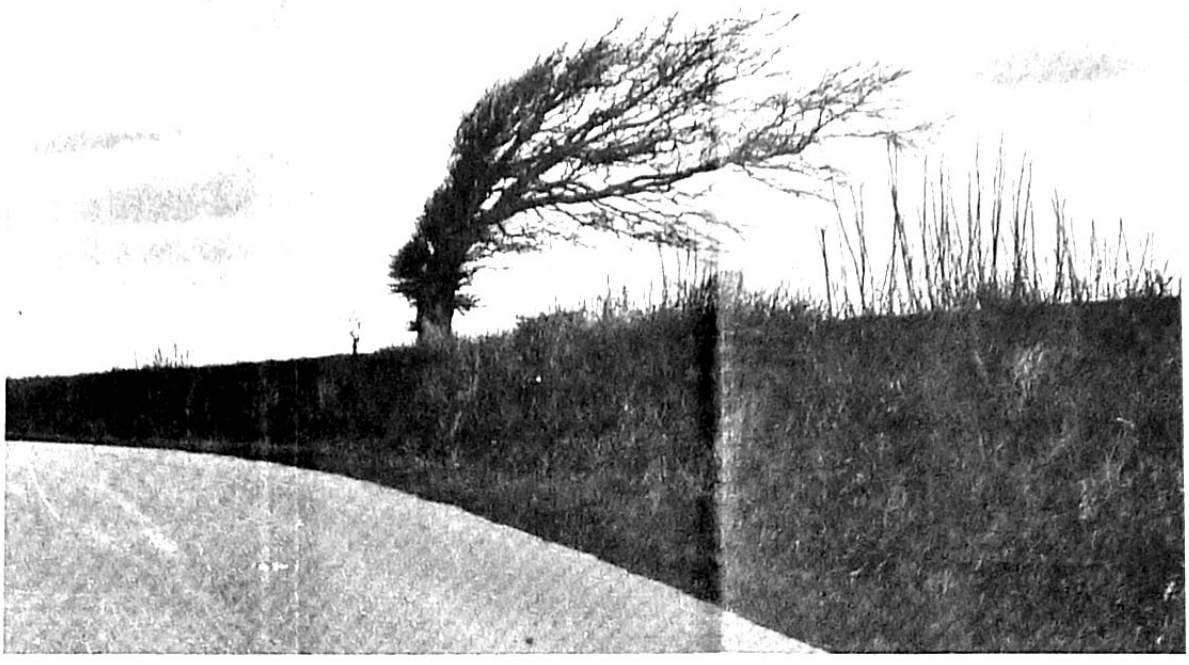

Wind-shaping of a beech tree on the Pembrokeshire coast.

Wind and wind-breaks

By R. W. Sidwell

The winds of last week have left their trail of destruction (please excuse the cliche) over much of the Vale. This is not the place to comment on the heavy losses of commercial fruit crops or the damage to polythene tunnels and dutch light structures on market garden holdings, serious though they are. It does, however, prompt me to write on the effects of wind on gardens and to suggest ways of reducing the damage done.

The obvious damage of fruit on the ground, leaves and branches torn from trees and shrubs and herbaceous plants blown over call for little explanation but there are some other effects more subtle and less obvious than these that are worth a little study. In still air a film of moisture vapour builds up near the leaf surface and the rate of water loss from the leaf is reduced. With air movement this film is dispersed and a more rapid drying occurs. An analogy with the washing on the line is not inappropriate. A drying breeze may be very welcome in the spring when one is preparing seed beds but later on when soil moisture falls the less air movement we have the better.

The harmful removal of water from the leaves may be contributed to by other factors. Near the coast salt spray will cause the osmotic removal of water and thus lead to foliage scorch. Although this is unlikely to occur inland unless such things as foliar feeds are applied at excessive rates there is a somewhat similar damage that occurs in cold weather. Under conditions of low temperature evaporation can take place from a leaf surface when the metabolic rate of the plant is too low to replace it. Much winter injury is simply low temperature dessication rather than actual frost injury to living tissues. Protection from wind can often reduce such injury.

Persistent high winds such as occur in coastal areas produce a shaping effect which is not due to the branches being blown in a certain direction but to the actual growth being less on the windward than the leeward side. The tree in our illustration was making far less growth on the exposed side than in the protected slip stream. This is a simple fact and one can do nothing about it but it does illustrate a wind effect not always appreciated. I will not go into attempts at an explanation. The casual factors are complicated.

Wind-breaks are attracting a lot of attention nowadays in commercial horticulture, although no wind-break could cope with gales such as we have recently experienced. The trouble with wind-breaks is that they take up rather a lot of room if they are to be fully effective. A solid wall is a wind-stopper but it gives protection for a shorter distance than a belt of mixed trees and shrubs through which the wind filters. The loss of rows of elms in our hedgerows has contributed to wind damage in many gardens.

In choosing trees for wind-breaks one should try to use those which do not create problems themselves. I have a number of very large crack willows in my garden. The latin name *Salix fragilis* is appropriate. Fragile they are. This tree has a weak spot near the base of its twigs and smaller branches A sharp blow with a hoe handle will cause branches as thick as one's wrist to snap abruptly. Every gale from the south or south west leaves its layer of shed material, sometimes knee deep. Branches as thick as one's arm were blown off last week. The weeping willow is much less troublesome and can be quite useful as a wind-break.

It is desirable, especially where space is limited, to use as wind-breaks trees which do not compete too much through their root systems. For this reason poplars and willows are not first choices for this purpose. The Italian alder has become the most widely recommended tree during recent years. It is an attractive upright grower with a fine display of catkins in early spring. Most of the smaller trees such as sorbus, prunus and crataegus can be effective in smaller gardens.

The shading effect of wind-breaks must be borne in mind. Whilst one can always find some plants that will tolerate shade some things need all the light they can get in this country. This applies particularly to vegetables and glasshouses. It is a good rule to say that on the north side of the area requiring maximum light the wind-break should not be nearer than two-and-a-half times its height. On the south side the figure is four times the height and for the south west and south east five times. This is a counsel of perfection which we may not attain but it is as well to have the information available.

To summarise we may say that anything that reduces air movement may be conducive to growth and that at times of water stress or low temperatures some such protection is most desirable. But since there are always flies in the ointment and before my pathology friends point out about Mills periods, etc, I must say that many fungus diseases spread rapidly under conditions of high humidity and that the most valuable preventative is a gentle drying breeze!