In shelter driveways P. radiata can provide the first shelter while more lasting trees and more attractive shrubs become established. The surroundings of the home can be improved greatly in appearance by judicious planting—pines in the background, some other conifer such as Cryptomeria or Lawson's cypress in front of the pines, and then deciduous trees and coloured shrubs as a low belt in front again.

Propagating P. radiata

Pinus radiata can be obtained from nurserymen as wrenched seedlings or as transplants, or the farmer may grow his own planting stock. Collecting cones of P. radiata is not difficult, but only shiny brown, well-shaped cones from straight, healthy trees should be used. Artificial heat or hot sunshine will open the cones and free the seeds, which may be sown the following spring. They should be planted in a shallow drill and covered only lightly, and they may need protection from birds. Because of their very high germination they need be sown only thinly.

The seedlings grow quickly and may be planted out after a year. To form a good root system which enables easy transplanting the trees should be wrenched well before being lifted. They can then be lined out for another year in a nursery or they can be put straight into their permanent positions. In some districts where winds are very strong sowing the seed directly where the shelter belt is wanted and thinning the surplus may result in trees with a firmer hold and much less damage by wind than if transplants were used.

Pinus muricata

Being more restricted in their range, the other species of pine have been planted less widely than *P. radiata* and under more special conditions. Of these secondary species *Pinus muricata* (the prickly-cone pine) is the most important. It is a darker and more bluish green than *P. radiata* and easily distinguished from it by its more compact, bushy habit and its smaller,





Pine trees planted too close to a house are dangerous.

prickly cone. The needles are in pairs which are crowded densely on the twig. Rarely does the tree attain any great size in New Zealand; usually it grows to about 40ft, high with a diameter of 12 to 18in.

It is a native of California and grows there on rocky headlands in coastal areas, but it is not present in large enough quantities to be of more than local significance. Throughout New Zealand it is growing under a variety of conditions, as it is very hardy and not very sensitive to soil variations. It thrives on poor or good soils, dry or damp, and also on sand, but its greatest value lies in its ability to stand salt winds and a great deal of exposure.

Though it grows only about two-thirds as quickly as *P. radiata*, it is revertheless one of the best pines for shelter, as it tends to branch horizontally, thus allowing plenty of light to reach the bottom branches and preventing the tree opening up so soon. However, if it is not protected by good fences, damage by grazing stock will result in loss of its efficiency as a windbreak.

Either single or multiple belts may be grown, the latter being more satisfactory for shelter. In a mixed belt, P. muricata has one advantage over P. radiata: Being of slower growth, it is less likely to dominate other species. Provided trimming is light, a complete green surface may be maintained from the ground upward, forming a solid barrier against wind or fire. This species is not topped as commonly as P. radiata, as it is less susceptible to wind damage because of its more compact habit and smaller height.

For planting in waste areas P. muricata is not very suitable, as it is not likely to grow quickly enough to smother weeds and its timber is not of first quality. Undoubtedly its greatest value is for planting on coastal farms as the first line of shelter where the exposure is too much for P. radiata.

Pinus pinaster

Originally planted in many localities in New Zealand, *Pinus pinaster* (the maritime pine) may often be distinguished easily by its curved stem, bare for much of its length, with sparse branches at the top forming a rounded crown. *P. pinaster* is a native of the Mediterranean region, extending into Greece and Algeria, where some trees reach 90 to 120ft.



[Green and Hahn Ltd. photo. Pine trees planted in lines to kill out garse.