

Scots Pine: A new approach at Windsor

By LEONARD U. GALLAGHER

I suppose the most interesting aspect of the forest scene at Windsor is the freshness and individuality in the approach to silviculture as well as the alertness of the forester in charge to avail of the phenomena of the region. Before moving on to the main topic I would like to illustrate the above remark by pointing to one incident that occurred there. An area of some 640 acres was acquired by the Crown for Windsor Forest. This area had been used by the army as a tank testing ground and was, when taken over, completely derelict. But some six months later the entire area was replanted, the forester in charge having realised the very commendable efficacy of the tanks as bulldozers to clear the ground for regeneration!

Although there are other aspects, many and varied, of silvicultural interest at Windsor, this article will confine itself to those relating to Scots pine, particularly stressing an intriguing adaptation of modern methods for the promotion of natural regeneration. Most of the stands of Scots pine are being grown to fulfil a particular need, viz. the market for transmission poles. In England, as here, a very attractive price is being offered for material of this nature so that The Forestry Directorate has decided to avail of that market and to cultivate Scots pine for the purpose. Scots pine is, in the main, an easy seller so that if the transmission pole market falls the timber can quite readily be sold for other purposes.

Many of the now maturing stands were planted in the conventional manner and in recent years have been brought under selective treatment for future transmission pole production. But those young stands which have been planted since the termination of the Second World War have been sown either by hand or by nature. For natural regeneration the method adopted is as follows. The existing mature stand is felled to the margin and instead of leaving a number of standards scattered throughout the area a periphery of trees a few rows deep is allowed to remain. Where the amount of cleared woodland is large the area is divided into a number of blocks, each surrounded by its border of trees. Each cleared area is some ten acres in extent and its shape is approximately square, this being the best unit of form and size to ensure complete seeding of the ground. The Forestry Directorate has found that, without preparation of the ground, uniform stocking does not occur and the bare ground has to be planted up. But by introducing a bulldozer on to the site and allowing it to level the ground it was found that an acre of land could be cleared in a normal working day at a cost of £2 per hour. That is the only preparation necessary. In other words, the re-establishment of Scots pine, with an assured 100% stocking of the ground costs a mere £16 per acre. The beauty of the bulldozer work is that it does

not merely prepare the ground for fruitful seeding but also clears out the stumps, removes any heavy vegetation and gives the seedlings a head start by leaving the ground free from competition. When the seeds germinate they come up in such numbers—25,000 per acre and upwards—that their abundance hinders the development of weeds. The next treatment of the area occurs some two to four years after establishment. At this stage the young trees are liberated by cutting swathes three feet wide through the plantation. These swathes are spaced two feet apart



Young natural regeneration with periphery of seed trees.

12 year old Scots pine with 3 ft. swathes removed.

and from these remaining bands of Scots the final crop is chosen either by selective thinning (or at this stage it might even be called "weeding"), or else by cutting further strips three feet wide at right angles to the first leaving "boxes" of pines 2 ft. by 2 ft. from which two or three trees are selected to remain and allowed to grow for some further years. Eventually the most promising trees of the groups are retained to form the crop. From then onwards the treatment simulates that of any normal even-aged stand. High pruning up to twenty feet is usually carried out; sometimes this is performed only on the best quality trees of the stand.

As an alternative to natural regeneration, or in an area that is being planted for the first time, the Scots pine seed may be sown broadcast. The ground is first prepared by bulldozer, as described above, or else by cultivator—if conditions are suitable. A mixture of seed and sawdust is then scattered broadcast over the ground. The sawdust allows for wider scattering of the seed and also, being visible on the soil, shows whether sowing is being carried out evenly, whether it is too light or too heavy. Once the area is established the trees are allowed to grow to height of one to two feet, as in the previous case and then the trees chosen for the final crop are isolated by mowing three feet swathes through the embryonic stand. For mowing a mechanical mower is used where the ground is suitable.

In some areas the pines were not thinned at an early age, but were allowed to grow for some twelve years. At this stage they were thinned by again cutting three feet lanes through them and allowing two feet lines of the species to remain. The accompanying photograph shows that the close proximity of the Scots to each other does not seem to have affected their vigour. In fact, one beneficial aspect of such close planting is the lightness of branching observed on the stems. Also the trees seem to have been rather drawn up due to the competition which, far from being detrimental, should give a good length of clean stem on which useful timber can be deposited. And further, no competing vegetation was observed; this would result in the trees being well above any encroaching growth which would tend to choke back the Scots once it was liberated. Even for twelve years old material a market has been found which offsets the cost of the thinning operation. The young stems removed from the strips are found to serve as useful bean-poles and are sold accordingly.

As a system of silvicultural establishment the method employed at Windsor Forest struck the author as being both a revolutionary approach to regeneration and one of practical simplicity. Its wider application rests on the capability of seeds of other species to germinate as prolifically under similar conditions. This may put rather a damper on the idea as little sign of natural regeneration has been noted in our most intensively used forest tree, Sitka spruce, (contorta pine as yet being rather an unknown entity in that respect). A forester may question the feasibility of introducing mechanisation to Scots pine sites but, except on steep slopes, this should not be too difficult as observation of the species shows that the high mountain areas and most of the poor, inaccessible areas are not suitable for Scots pine and therefore should not be contemplated for the purpose. Admittedly the areas observed at Windsor were on good, approachable sites, but even on more difficult ground machinery can be introduced with good effect. One may assume that the cost of establishing the plantation by hand-sowing rather than by natural regeneration would be more expensive but it is most unlikely that it should equal the cost involved in pit planting. Besides the obvious advantages of the method in localities where it may be applied, the venture is academically interesting in that it broadens the approach to forestry. This, I think, is its real attraction: text-book rules and established tradition, while not being discarded, are suitably modified to suit local conditions and current times. The inventiveness of the forest officers at Windsor surely shows that there is still room for new ideas. Any aspect of silvicultural endeavour, as well as all other research, may, at any time, produce a new and unique concept. Such ideas should never be denied their rights. They should be tried. They may not reach the heights expected, but often they exceed them.