Park land clearing
MODERN methods of land clearing have accelerated the development of virgin country in the higher rainfall, heavily timbered areas. These methods are still costly and involve a considerable outlay of capital by the individual farmer, both for clearing and developing these lands before they become productive.

A system of clearing the small trees and ring-barking the larger ones has been in operation for many years, but the dead timber standing in the paddock becomes a serious liability to further progress, because the falling limbs and trunks litter the paddock and a considerable amount of time and labour is needed to saw, burn or remove these as they fall.

In recent years, a method has been devised of bulldozing the small timber and low scrub using a light bulldozer and leaving a considerable number of the larger trees untouched. By this means an incomplete green canopy is retained at tree top level, but the floor is clean between the larger tree trunks. This permits the establishment of pasture and an increase in the productive area on the farm before the heavier costs of total clearing are needed. It has the further advantage that if the area is eventually totally cleared, the capital cost of development is spread over a period of time during which the area is producing pasture. Sometimes these areas are never fully cleared, but are left as park land areas capable of growing pastures without a high cost of clearing.

It is argued that trees, especially red gums, exert a beneficial effect in bringing plant nutrients, such as potash from the deeper soil horizons and deposit them on the surface of the soil as leaves which soon become available to pasture plants. It has been estimated that the amount of potash which can reach the surface layers in the soil in this way may be equivalent to as much as 48 lb. per acre per annum of muriate of potash.

On the other hand, in heavy rainfall areas, the removal of portion of the timber cover may cause a rise in the water table and this in turn will cause the green trees to die out as a result of waterlogging. If this happens, the farmer is still facing the difficulty of handling falling trees in the paddock.

THE NILLUP DEMONSTRATION

This method of park land clearing was demonstrated on Mr. V. Castle's property at Nillup during 1951-1953. An area of 16 acres, representing a number of soil types was selected and bulldozed to remove the lighter timber in January, 1951. A D.6 75 h.p. bulldozer was used as this was the only one available at the time, but a lighter bulldozer or even a dozer blade fitted to a farm tractor equipped with half-tracks would have been satisfactory for the work at a much lower cost. After bull-
dozing, the timber was windrowed and burnt. The cleaning up operations were carried out by Mr. Castle, using a power saw and farm tractor.

The area was cultivated by means of a tandem disc cultivator followed by pasture harrows. It was seeded down with the following seed mixture:—Tallarook subterranean clover 6 lb. per acre, Clunes perennial ryegrass 4 lb. per acre and Wimmera ryegrass 2 lb. per acre. The seed was covered by pasture harrows.

The 16 acres were fertilised with superphosphate at the rate of 2 cwt. per acre and the super was applied with a super-spinner.

During the first year, 1951, germination after the May planting was very good. Seedling mortality occurred and by August it was estimated that 75 per cent. of the seedlings had died off for this reason.

Good growth of clover, however, occurred along the areas where the windrows had been burnt and also along the track immediately behind the super-spreader, but in between, poor results were obtained.

In 1952, the area was cross raked to spread the seed and some of the soil containing the nodule bacteria from the well grown strips was raked into the bare strips and the area was again fertilised with superphosphate at 2 cwt. per acre. Strips of lime at the rate of 5 cwt. per acre were put down across the whole paddock. As some sections retained soil moisture throughout the summer months, small areas were sown with Perennial White clover (Trifolium repens).

During 1952, some improvement in growth occurred in the wetter sections. Tallarook subterranean clover persisted well and a thin stand of Wimmera ryegrass was obtained. Perennial White clover proved unsuccessful and only a very poor establishment of perennial ryegrass was obtained. A small amount of grazing only was obtained during that year and the animals did not appear to relish the herbage.

During 1953, Yarloop subterranean clover was sown over the whole area, but in that year a good germination of all species occurred. The area was fertilised with superphosphate and copper and zinc at the rate of 2 cwt. per acre and an excellent stand of Yarloop subterranean clover, Tallarook subterranean clover and Wimmera ryegrass was obtained. In the early part of the year, cattle did not find this pasture very palatable, but during the spring months, it was relished.

Heavy grazing for 70 cows was obtained during 1953 on the 16 acres of this area and it is pointed out that during the spring months, the animals relished this feed. During the spring of 1953, excellent pasture of subterranean clover and ryegrass was obtained.

During the autumn of 1954, excellent germination was again obtained and no difficulty was experienced in getting the stock to eat the fodder. During the early autumn months, 25 cows were grazed for two hours per day in a period of six weeks on the 16 acres. This is showing excellent pasture growth for 1954 and it is antici-
of the standing trees. A number of the trees left on this demonstration subsequently died and the area became waterlogged during the winter months, but it was noticeable that similar tree deaths occurred on the surrounding area and that the proportion of trees which died was not greater on the demonstrational area than beyond it.

Over the three year period, the cost of developing a strong pasture on this 16 acres of land has been £257 or approximately £16 per acre. This cost has been incurred over the three year period as follows:

| Item                          | Cost
|-------------------------------|------|
| Bulldozing                    | £119.00
| Fertiliser—                   |     |
| 1951, Super 32 cwt.           | £30.00
| 1952, Super 16 bags           | £24.19
| 1953, Super + copper + zinc 16 bags | £21.19
| Seed—                         |     |
| Tallarook subterranean clover 96 lb. | £39.10
| Yarloop subterranean clover 50 lb. | £9.13
| Clunes perennial ryegrass 64 lb. | £9.18
| Wimmera ryegrass 32 lb.       | £3.16
| **Total**                     | **£257.15**

All costs are calculated on present day prices for seed and fertiliser delivered at Karridale.

The main annual outlay on this pasture for a number of years will be in the cost of applications of superphosphate and the demonstration has shown very clearly that substantial areas can be brought into production at a relatively low cost.

DEVELOPING NEW AREAS

The costs outlined in the above table represent the outlay necessary to bring this area under production and do not include the labour contributed by Mr. Castle in burning up bulldozed logs or in his use of the power saw for subsequent cleaning up, but they do represent the out of pocket expenditure necessary to develop an area along these lines.

The demonstration has shown a method by which farmers may increase their areas of pasture with a moderate capital outlay. Considerable uncleared areas of similar country occur in the Karridale region and this demonstration shows one method of developing this land.

No improvement following the use of lime was recorded in this demonstration and also the establishment of perennial ryegrass and Perennial White clover was very poor. It is recommended that for the initial stages of establishment of a parkland area such as this, a simple mixture consisting of Tallarook subterranean clover 3 lb., Yarloop subterranean clover 3 lb. and Wimmera ryegrass 4 lb. per acre should be used and this fertilised with copper, zinc, super at the rate of 2 cwt. per acre.

The development of seedling mortality in the first year of newly cleared land is well known in many areas in the South-West. This affects fully cleared as well as parkland cleared areas and usually a period of 12 months fallow after the original discing is recommended to overcome this. Where 12 months fallow period is adopted, the area should be re-cultivated in the second year before being sown down.

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