

UP & DOWN PRUNING: MID-AND UP-COUNTRY OBSERVATIONS

A. D. Scott

The immediate temptation is to call the pruning described hereunder "surgical" pruning, but as surgery is usually thought of as a once and for all operation the term is best avoided here. The operations described will take 2 or 3 pruning cycles to complete; *i.e.* once committed to this style you have a 6-12 year programme on your hands.

If you examine a stand of tea you will find a number of branches starting from the base of the bush which degenerate through a series of knots or cankers, tissue affected by shot-hole borer, sunscorch or other damage to one or two spindly twigs at the end. Such branches must be flushing at well below optimum level and are non-profit making. In a similar manner a water pipe which is rusted or scaly inside will not deliver the rated number of gallons per hour. Some examples of the non-profit making type of branch referred to may be seen in Figure 1.

The object of the exercise is to replace wood of the type shown with clean new wood from the base of the bush, and thereafter to continue pruning down selected branches at each cycle as a standard practice, (albeit less drastically, with knife rather than saw) thereby eliminating the surges and recessions which result from pruning all the growth up or all the growth down at the same time.

The desired object is simply achieved. All you require are, initially, pruning saws, extra labour per acre at pruning time, intensive supervision and patience. Nature will do the rest and you will be rewarded with fine new wood.

Obviously if you take all the gnarled growth out in one pruning you are likely to cause a temporary recession in crop. Therefore it will have to be decided on the spot field by field, the percentage of bad wood you wish to remove at one time. Consideration should be given to the vigour of a field, the extent of bad wood, permissible pruning costs, density of planting, shade and soil cover. The decision lies between removing $\frac{1}{3}$ and $\frac{1}{2}$ of the bad wood in the majority of cases. A sample of what you are likely to be confronted with may be seen in Figures 2 and 3.

Having made your decision, take your courage and a saw in both hands and cut off the branch as near to the main trunk of the bush or as near the soil as may be possible. Do not allow "half cuts" or half-length stumps to remain however tempting it seems. Experience has shown that they will not supply any more new wood than will come from the base of the trunk; they sometimes die back leaving exposed dead wood with concomitant infection risk and most important of all, if they do sprout from near the saw cut, two cycles later they will provide you with the problem of whether to prune up on new wood starting from an already high point or whether to come down to the base of the bush, thereby wasting 2 cycles new growth. (Remember that this will be the 3rd prune of the series and this branch will then be about the tallest on the bush). On some of the earlier work done in my Company we came up against this problem and almost invariably the decision has been to cut back to the base of the bush again. In the early stages we did not have as much courage or conviction as we have now with the benefit of very positive results to look

back on. Occasional bushes are found with such weird shapes that the only course is to collar prune them. This can be done without fear. See Figure 4 showing recovery on a collar-pruned bush 100 days after pruning at an elevation of 3,000 ft. A more usual small bush in the same field, from which two rotten branches were sawn is shown in Figure 5.

Earlier work in this style at an elevation of about 3,500 ft. can be seen in Figures 6 and 7. In this example the new wood resulting from the July 1959 prune and the saw cuts from the July 1963 second pruning round are plainly visible. In Figure 8, a more extreme example can be seen; a whole field had all the bad wood removed in one fell swoop 26 months prior to this photograph being taken. The drastic work done and the excellent new wood for future development are typical examples from this field, not just an isolated "winner". The field stands at 3,200 ft. and was planted in 1914. Figure 9 shows the recovery from a somewhat smaller frame.

Practical Observations

1. *Cost*: In a badly affected field removal of 1/3rd of the bad wood will cost about 5 labourers per acre over the usual pruning cost. The remaining branches are pruned in the normal style. Higher percentages will involve proportionately higher costs.

2. *Yield*: If radical action is taken as in Figure 8, there will be a temporary yield recession while a complete new frame is developed. With a more gradual approach there need not be any yield drop, in fact there is no reason why yields should not continue to rise. In this connection I quote the yields of 2 estates in Uva which have carried out this style of prune for 2 complete cycles, in other words the major benefits from the new wood developed and developing still lie ahead of them, but even while the work was being done yields continued to rise:—

		<i>Yield</i> 8 seasons ago	<i>Yield</i> 4 seasons ago	<i>Yield</i> last season
Estate A	...	709	995	1121
Estate B	...	739	1026	1168

Obviously manuring policy and other factors are at work here; but these figures show that there need not necessarily be a drop in overall yield following the introduction of this style of pruning, and while the new wood is developing.

3. *Shot-Hole Borer*: If this style of work is undertaken anywhere within the shot-hole borer elevation range, it would be advisable to undertake spraying against that pest. There is no point in developing good clean wood from the base of the bush and allowing it to become infested. This would be an invitation to the recurrence of branches as shown in Figure 1.

4. *Bush spacing and Soil Cover*: In older fields the bush spacing is often 4 × 4 or 4 × 3½ feet and the old-timers, in order to induce rapid spread, cleaned out the centre of the bushes and developed large lateral branches. These branches frequently suffered from sunscorch leading to much of the rot we now wish to remove, but in removing them in any quantity large bare patches of soil may be exposed. Thus thought must be given to protecting this soil until the bushes begin to fill out. Prunings will disappear to the lines or the village, and alternative cover in the form of high shade or green-manure loppings, thatch or cover crop would be an asset. This is particularly so in the more extreme climate of Uva.

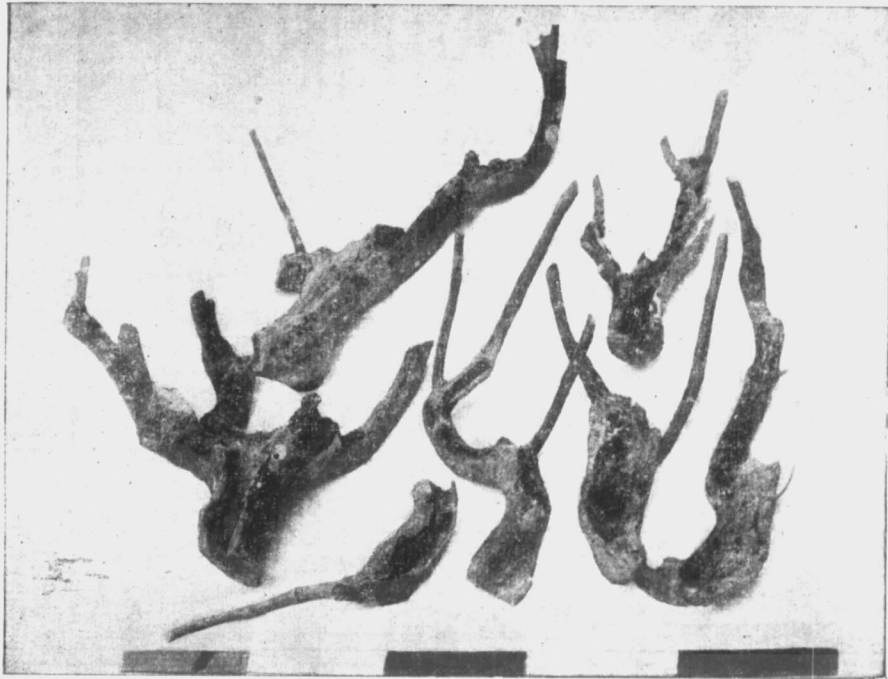


Figure 1. Examples of damaged main branches. Scale marked in six-inch lengths.

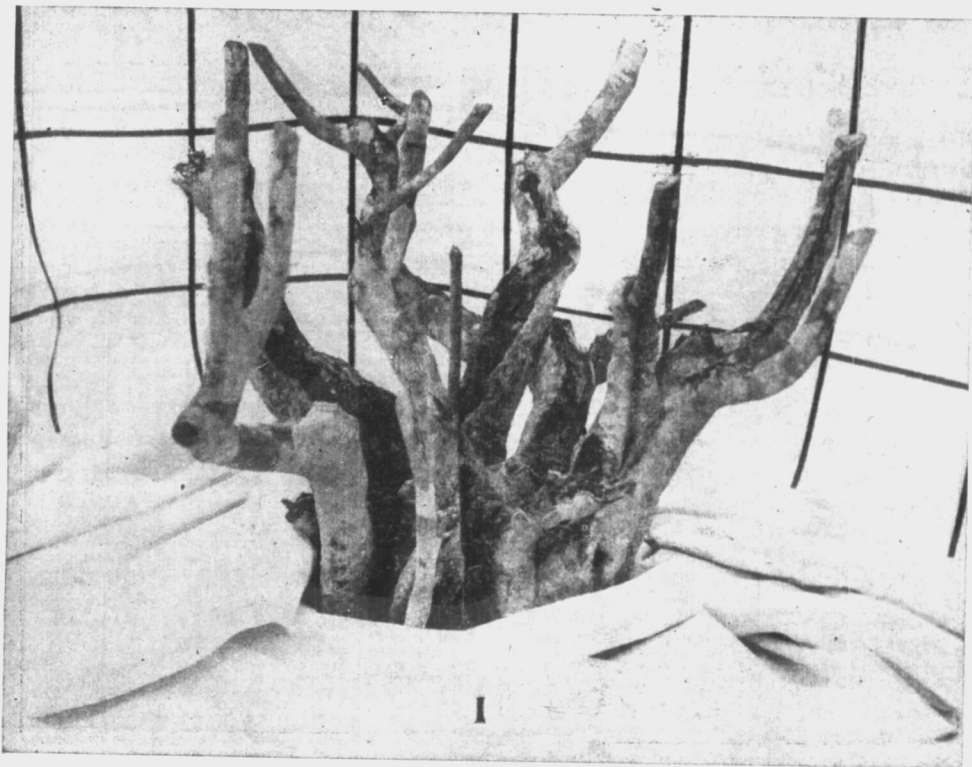


Figure 2. A typical frame necessitating saw-pruning. Background grid in six-inch divisions.

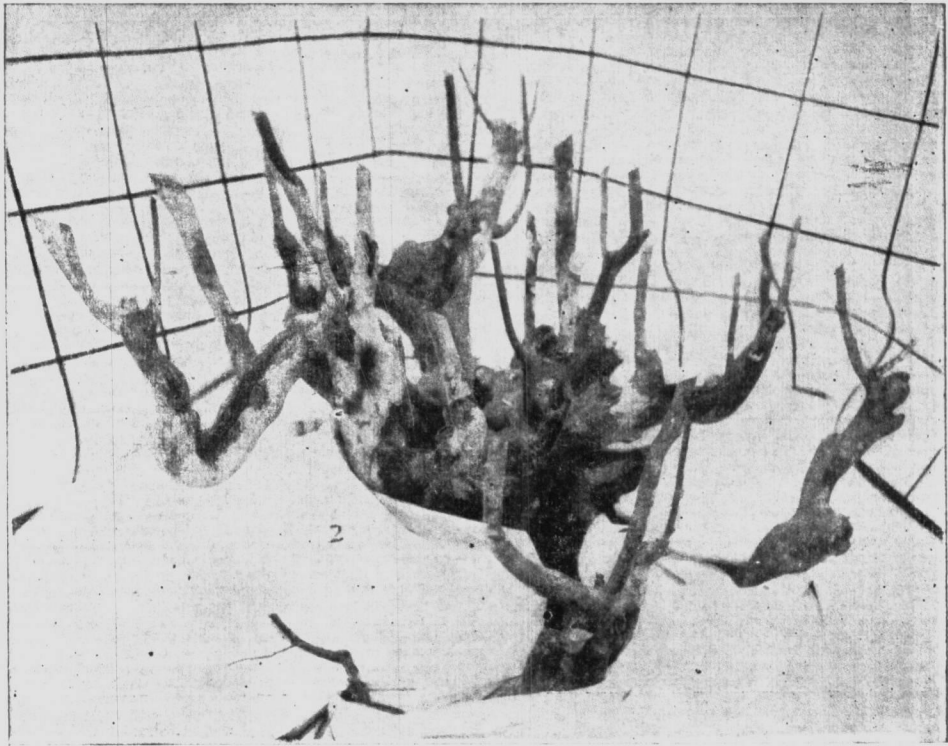


Figure 3. A further example of a badly-rotted frame.

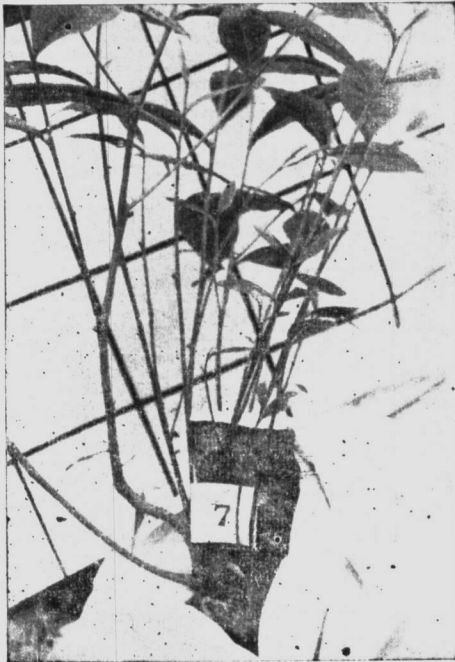


Figure 4. Recovery from a collar-pruned bush; 100 days.

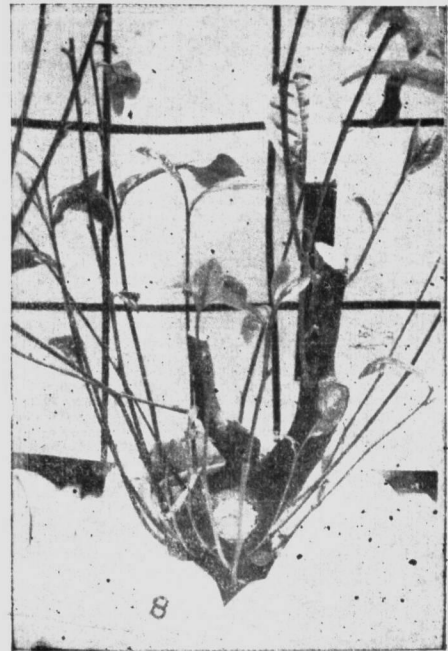


Figure 5. Recovery from a small bush, hard pruned; 100 days.

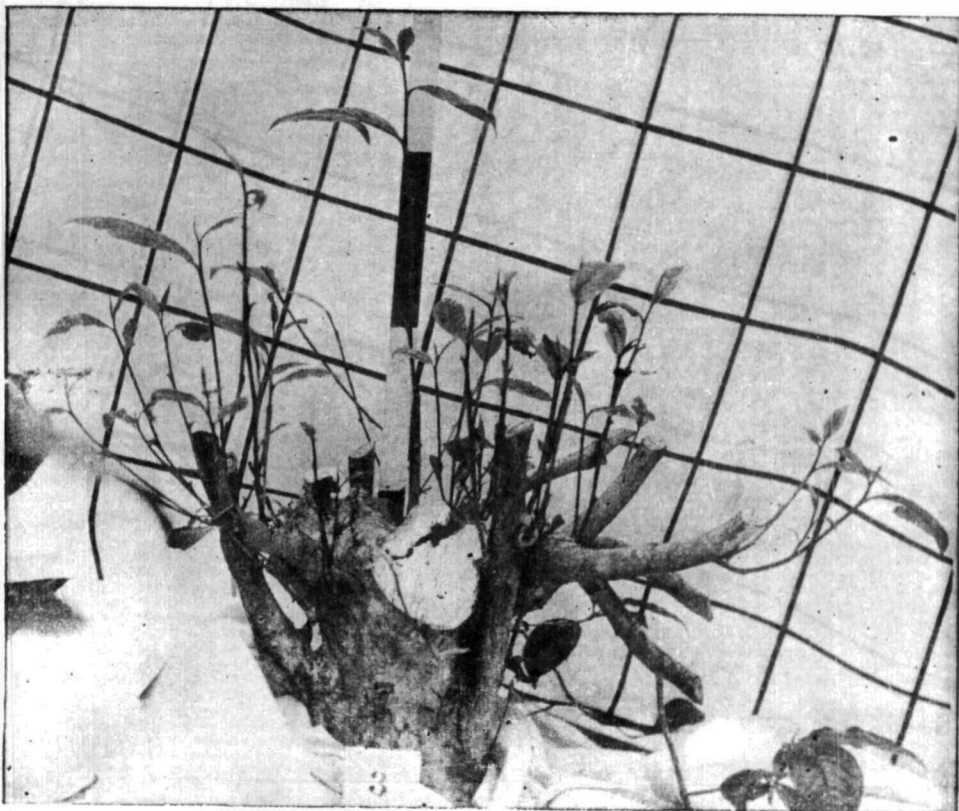


Figure 6. Showing recovery from the second saw prune. Note new wood resulting from 1959 saw prune.

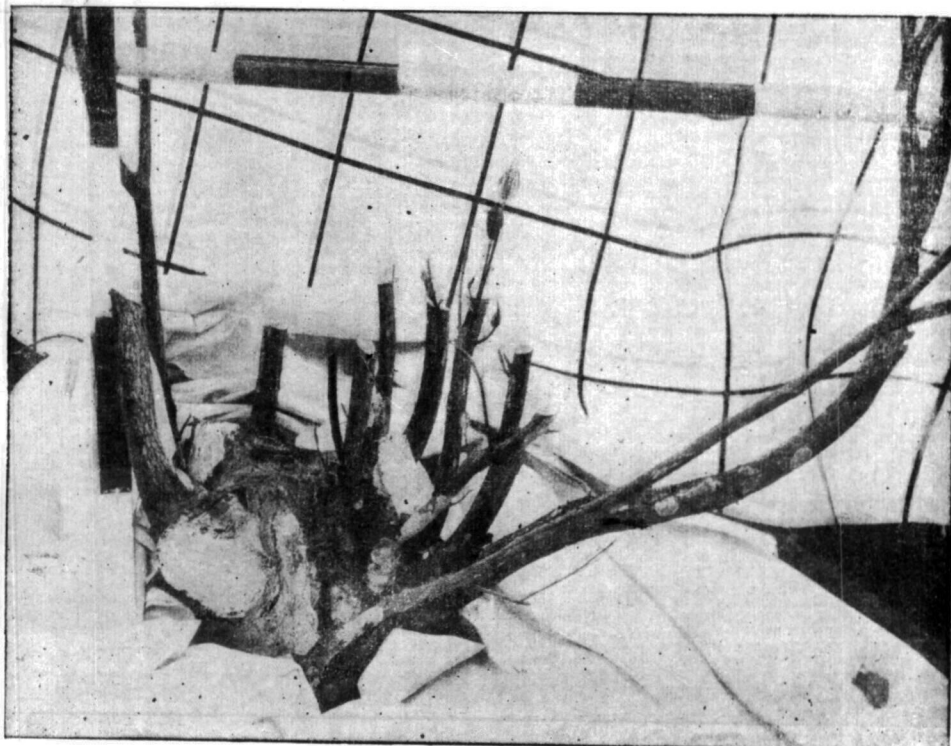


Figure 7. A further example, as in Figure 6. Saw cuts whitewashed for photographic clarity.

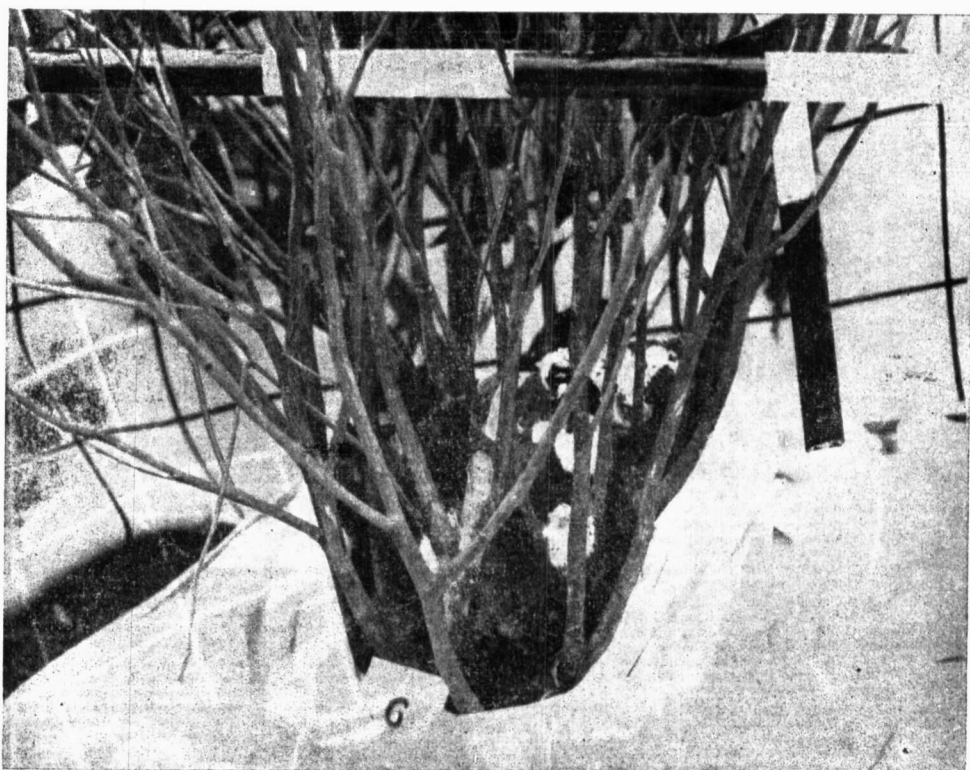


Figure 8. Showing recovery 26 months after all branches had been removed in one operation.

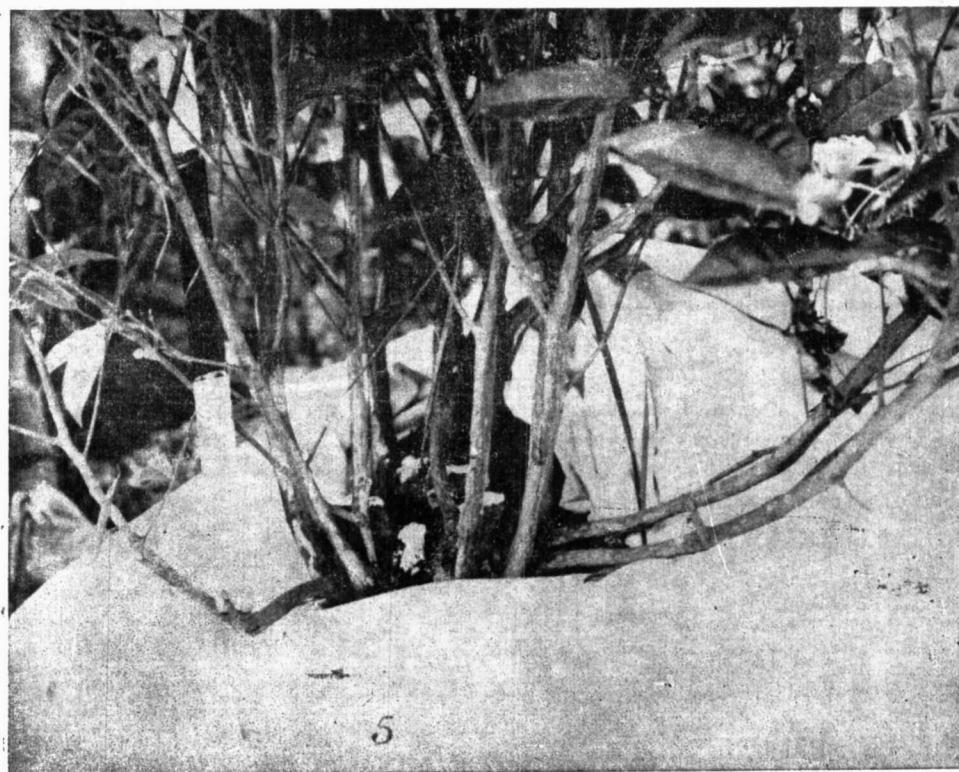


Figure 9. A further example, showing recovery from a smaller bush.

5. *Season of pruning*: Good recovery has been obtained in fields pruned as described in the months of January, March, May, June, July and August. Good recovery here means the successful putting forth of new shoots rather than the rate of growth; the latter varies slightly with the seasons, the former does not appear to do so.

6. *Tipping*: Bud break from the down-pruned branches will be slow in comparison with the rest. Delayed tipping and very light plucking in the first year or so are advisable in order to let this new wood thicken up and the bush build up its maintenance foliage and reserves. The benefits will be observed at the end of the cycle.

7. *Manure*: Guard against being induced by a temporary "lull" in the early stages of the cycle into placing a field into a lower manure category.

8. *Dieback*: There are no recorded figures, but visual comparison shows that there is no more dieback following an "up and down" prune than there is with other more common styles. Frequently there is less.

9. *General*: It has not been found necessary, where the removal of rotten and gnarled wood is being done over 2 or 3 cycles, to indulge in any unusual resting, manuring or composting.

10. *Location*: The writer's personal experience with this style of pruning has been over a period of some 8 years in Uva at elevations ranging from 2,500 to 5,000 ft. Recovery at all elevations has been successful. Observations of recovery in tea similarly pruned in Dimbula, Dickoya and Uda Pussellawa has shown that it is equally successful in those districts. The writer lays no claim to originating this style.

11. *Labour & Supervision*: About one labourer in five will show any real "feel" for this work and the pruning Kangani, if elderly, may be unable to cope with the new style. 1 man—Isaw, saves any allegation that "I could not saw that branch because Ramasamy had the saw"; but most important of all is intensive supervision at management staff level.

The photographs were taken on Sarnia Group, Badulla, by Mr. D. J. M. Hettiarachchi of the Tea Research Institute.