Handling of Young Tea.*

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AS the result of having serious casualties in young Tea clearings from 1919 onwards, I started some experiments in 1922: originally with the object of trying to eliminate those that I considered avoidable, *i.e.*, deaths from ringing by the wind.

It should first be stated that these experiments are on typical Uva patna generally very poor but with good patches. The elevation is 4200-4500 feet: the exposure to wind extremely severe (the blocks all lie round what is known locally as windy corner) and the rainfall is considerably below the estate average of 68 inches per annum. The land is on the southern edge of a notoriously dry triangle. I put forward my experience and the result of my experiments for comment and criticism as I cannot help thinking that others have tried these methods or something very similar to them, and I should be glad to hear their views, more particularly as to whether they were successful or why they gave up the method.

My first trial was on three bushes only (basket plants put out in November-December, 1922) side by side. These were first cut down at approximately 5, 10 and 12 months old: and I will now follow their history. The 10 month old cut (October, 1923) seemed most promising at first and the 5 month cut the least, but I continued to cut them roughly every six months, *i.e.* April and October and to-day at 4½ years the bushes are rather striking. They are all a table at approximately 30 inches, but the one cut originally at 12 months has one big stem in the middle thicker than one's thumb and a number of smaller branches spreading outward but the flush is on the big stem only. The 10 month cut is slightly better and has three good stems as thick as the middle finger and several others but again the flush is almost entirely on the three stems. This is the bush that promised best originally.

The 5 month cut bush is 5½ by 4½ feet across, has a dozen or more stems all of good thickness, practically equal and has flush all over the plucking table. This bush was originally the least promising of the three and has turned out far and away the best. These bushes are facing west in the teeth of the wind.

* A paper read before the Meeting of the Estates Products Committee of the Board of Agriculture, held on May 12th, 1927.

In 1923 I planted a six-acre block rather more sheltered and with better than average soil. This was cut at 10 months as the evidence of the 1922 bushes pointed to that as the most promising. This 1923 Clearing was in light plucking (once a month) at 30 months and has been in regular rounds ever since. It makes a good cover of tea with plucking tables about three feet across.

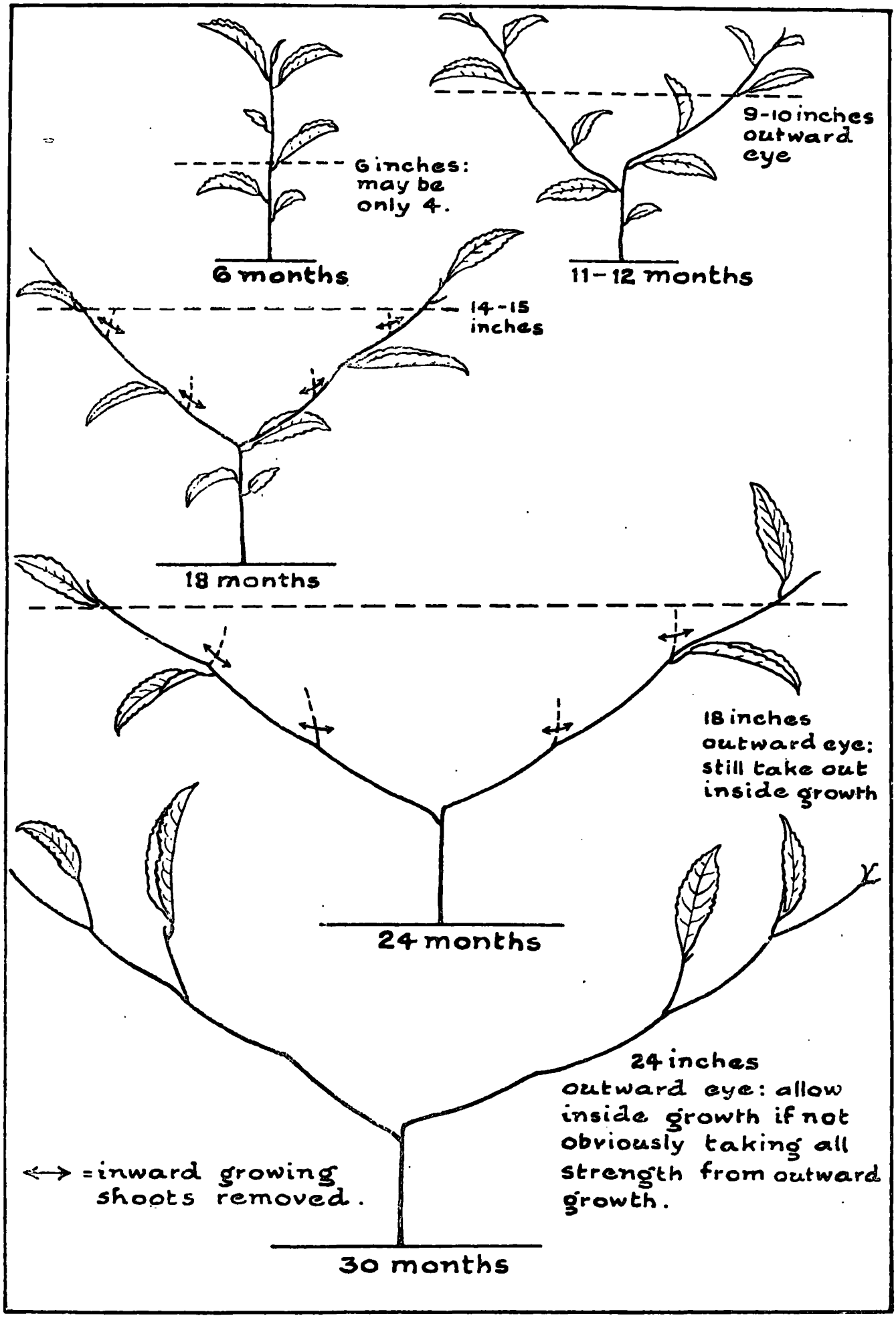
By the time I planted in 1925 (30 acres) I had found the 5 month cut on the 1922 bushes was the best and I adopted this for the whole clearing cutting it in April, 1926, and again in October, 1926. In November, 1926, I found casualties were under two per cent. and to-day practically every bush has a small frame.

To describe the method in detail. It will of course be understood that the periods between cuttings (6 months), the months when it is done (April and October) and the height of the cut apply to conditions here and will of course vary elsewhere at other elevations. The main point to keep in mind is never to cut into red wood, but always at an 'outward' eye on wood still green. It is practically nothing but plucking but it should be done with a pen-knife and the cuts should be perfectly clean at the axil not leaving a bit of stalk above it. This ensures a perfect callus. The last tipping level should be invisible or practically so.

The normal growth from seed is first a fish leaf and then two large leaves and it is generally at this stage that a basket plant is put out in say November-December. When new growth starts it is generally another fish leaf and then more large leaves. The first tipping should be down to the nursery level, *i.e.*, take out the new growth entirely including the fish leaf. This is done about April, *i.e.*, six months after planting: it should be earlier if the wood at that point is red before that time. The cut must be into green wood.

This usually starts two eyes from the axils of the original two big leaves of nursery growth. If it starts more, so much the better. If less, never mind. Go on cutting 'up;' the lower eyes will start before long. Plants on my 1925 Clearing that looked like going into single stems for the first twelve months, are now throwing out shoots from the bottom. Don't cut it down: *e.g.*, into red wood.

To return again to the first cut. We will take the two shoots from the two axils. These are left to grow till about October-November at this elevation. They are again cut into green wood at an 'outward' eye: levels about 9 or 10 inches. Should there be signs of shoots from these branches going inwards, take them away completely at the axil: and leave nothing but outward growth. You now have a small frame 9-10 inches high of two or more branches at one year from planting.



Block by Survey Dept. Ceylon.

Diagrams Showing Method of Handing Young Tea.

In the following April (18 months old) it is probable you will have two or more branches from each of these two and possibly others shooting from below the original fork. Leave the latter if they are below the new tipping level. If they are up to it, treat them as the others. I have found that in April the cut should be at about 14 inches from the ground but it must be at an 'outward' eye and into green wood. Don't hesitate to take out any shoot going inwards or crosswise. Keep the growth like a star-fish when looked down on from above and keep the whole strength of the bush for outward growth. This brings us to 18 month old frames at about 14-18 inches high. The following November (two years from planting) do the same again at about 18 inches, cutting into green wood at an outward eye: and again take out all 'inward' shoots and those going crosswise.

This process is repeated again at 30 months and 36 months when one arrives at a 27 in. frame more or less, but it will probably be advisable not to remove inward shoots any more unless there is evidence that the strength of the branch is going to feed the inward shoot to the detriment of the outward one. It should then be removed.

Now consider the position. You have a formed bush three years from planting. But look at the frame of the bush. It hasn't got a wound of any kind below its plucking surface. The 'centering' was done at 6 months and all sign of it has long since disappeared, it is completely healed and so are the other cuts. I anticipate plucking this bush for two years or possibly more before it gets a real pruning at all (I have not pruned the 1922 bushes yet) and when pruning time comes, I expect to prune 'up' for several cycles. The time will come when the frame gets too high and it has to come down. Where? Just below the original real pruning because you have perfectly clean unknotted wood below it, *i.e.*, the first cut down after several cycles of pruning up would be at about 22 to 24 inches from the ground. Then you prune up again for several cycles: and at the end of that, it would only be necessary to come 'down' to 20 to 22 inches for the same reason that the wood below it is perfectly clean. It would seem that collar pruning is eliminated because there is no bole. Among the attractions of this method that strike me are the following:—

Firstly, as young tea, casualties are reduced to a minimum. Later on, any danger of stump rot must be next to nil: there is no stump.

Any disease entering through wounds can be easily dealt with as there is ample clean wood below it without wounds.

The cover of tea is good and helps to save:—

1. Soil wash from rain as the rain strikes the bush: not directly on to the soil.

2. Soil baking from the sun.

I found great stress laid on these two points in Assam where a 'cover' of tea as protection against the action of rain and sun are considered of the first importance.

With regard to training coolies to do the work, I employ women with pen-knives. It originally took six or more coolies per acre even for the simple first cuts, but now that they understand the idea, the cost is only two coolies an acre.

In conclusion I would like to add that I would be very pleased to show the work to anybody interested. It is extremely difficult to describe it even with sketches: and photographs are next to useless as the small frames are concealed by the leaves. On the other hand once seen, it is quite simple.

Discussion.

MR. R. G. COOMBE stated that his experiences were the same as was described by Mr. Horsfall. One point that Mr. Horsfall had not mentioned, and which to his mind was of the greatest importance, was that he had thoroughly forked every inch of the ground and not merely every alternate line. Taking everything all round he could not help feeling that Mr. Horsfall was working in the right direction. What was particularly noticeable about the bushes was the very fine callus formation. There was not a single wound to speak of and this condition was of peculiar value in the low-country, where one had to deal with the all-ravaging termite.

MR. D. S. CAMERON asked whether Mr. Horsfall could give him an idea of the cost of this work.

MR. HORSFALL replied that the original cost was about Rs. 3-4 per acre, but that the cost now was about Re. 1/- per acre. The work was all done by women with pocket knives. Considerable patience and time had of course been required at first to train the coolies. He added that he could now do 30 acres with 60 coolies.

MR. J. W. SCOTT enquired how this method could be adopted if stumps were planted.

MR. HORSFALL replied that it was only possible with seed at stake or when small basket plants were planted.

THE DIRECTOR OF AGRICULTURE said that he was recently in Uva and saw the fields on which Mr. Horsfall had been carrying out his experiments and, like Mr. Coombe, had been greatly impressed by all he had seen. It was in view of the treatment differing from the orthodox that he had invited Mr. Horsfall to give a description of his experiments to the Committee. Mr. Horsfall had stated that his method was useful against soil erosion. What he meant was that by training the lateral spread of the bushes in the manner recommended, the force of the rain was broken. This was brought to the attention of the Ceylon delegation which visited Assam, where they attempt to secure as wide a lateral spread on their bushes as possible. It was a sound practice.

THE DIRECTOR OF AGRICULTURE in concluding his remarks proposed a very hearty vote of thanks to Mr. Horsfall for the able description of his experiments and hoped that it would stimulate the interest of all who were connected with the tea industry.

The vote of thanks was carried with acclamation.

MR. GORDON PYPER enquired whether it would be possible to record these experiments with diagrams in the " Tropical Agriculturist."

THE DIRECTOR OF AGRICULTURE said that Mr. Gordon Pyper had hit the nail on the head and added that it would be very useful if these experiments were reproduced, together with sketches, in the " Tropical Agriculturist."

MR. HORSFALL undertook to furnish details of his experiments for publication in the "Tropical Agriculturist."