

CATTLE DAMAGE TO COCONUTS

AN ACCOUNT OF THE DISCUSSION

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THE damage done by cattle on coconut estates is twofold. Firstly, there is the direct damage they do to the young palms by eating their leaves and, secondly, there is the indirect damage done by the animals trampling, hardening and exposing the ground round these young plants. In fact cattle may well be described as the worst pest of coconuts in Ceylon as so few coconut properties are properly protected against cattle.

If cattle are allowed to eat the leaves of coconut seedlings constantly, the plants are naturally bound to suffer. The chemical products necessary for the growth and development of the plant are manufactured in the leaf tissue, so any reduction in leaf area will affect the amount produced and consequently will retard and may even kill the plant. In fact the damage done to young palms is often so serious that they begin to taper and as a result of the poor start become low-yielders.

When cattle attack an unprotected coconut seedling, it is not only the older leaves which are consumed, but every new leaf is also damaged as soon as it emerges and very often, during this process, the bud in its axil is damaged owing to the tearing strain exerted on the leaf by the animal. Coconut seedlings have only a single terminal bud and if that is damaged, the entire plant dies.

Methods of Protection.—It is absolutely essential therefore to protect newly planted seedlings from cattle damage. There are various ways of doing this. If the seedlings are isolated "supplies," it is necessary to protect each of them individually with barbed wire or by a wall of husks all round. If the transplanted seedlings are concentrated within an area it is of course cheaper to fence round the entire block. Another method of keeping cattle away from seedlings is to prepare a slurry of cow-dung in water and apply this to the underside of the leaves. Cattle do not like the smell of their own dung and will not eat leaves so treated, just as they will not eat the rich pasture grass surrounding a pat of manure. When the old coating of manure is washed off by rain, a fresh treatment is of course necessary.

Damage due to trampling is serious because when the green cover is killed and the ground is exposed and trampled with hoof marks, the top-soil is gradually eroded by the heavy rains and the estate is impoverished.

Cost of Protection of Seedlings.—

1. *Husk walls round the individual seedlings (Kottuwa).*

3,500 husks at Rs. 11/- per 1,000 husks	Rs. 38.50
Labour, and Transport of husks	„ 10.00
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Cost per plant	Rs. 48.50

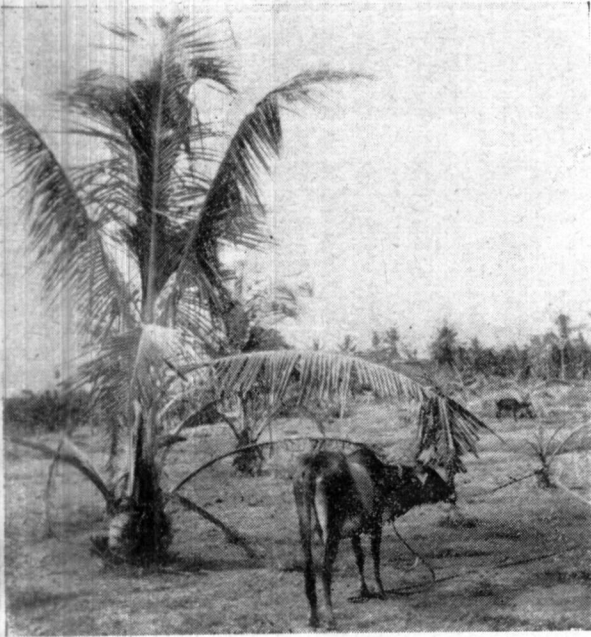
The cost is prohibitive and the method has certain disadvantages in that the seedlings so enclosed are inaccessible for beetle inspection; the walls can be broken down by the animals; and the older leaves which overhang are eaten. Furthermore, the walls of husk have to be renewed every



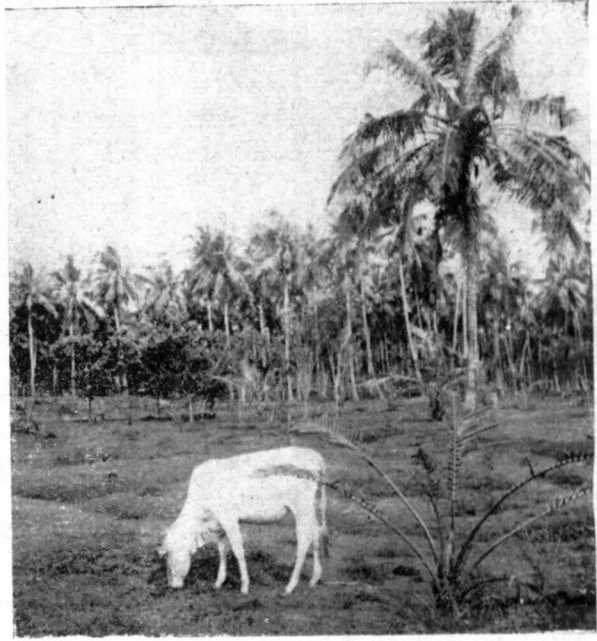
"KOTTUWA" OR WALL OF HUSKS.
The leaves also need to be bound.



FENCING INDIVIDUAL SEEDLINGS.
The surround may be barbed wire, sticks or leaf fronds.



The worst pest of coconuts in Ceylon.



Reduction in leaf area will retard and may kill the plant.



If the terminal bud is damaged the plant is destroyed.

year. This system of protection is therefore *not* recommended being far too costly and not very effective.

2. *Fencing individual seedlings—*

4 Milla Posts @ Rs. 1.60 each	Rs.	6.40
Cost of Labour, Barbed wire and Staples	„	12.50
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Cost per plant	Rs.	18.90
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3. *Fencing the entire estate or blocks*

Cost of Barbed wire—2 cwts. @ Rs. 50/- each	Rs.	100.00
Cost of Staples	„	8.00
Cost of 105 Fence Posts—Milla @ Rs. 1.60	„	160.00
Labour charges	„	50.00
Transport of Barbed wire and Staples	„	5.00
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Cost per acre of coconuts	Rs.	323.00
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Equivalent cost per plant	Rs.	4.50
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4. *Treating the leaves with cow-dung.*

This is the easiest and least expensive form of protection because a boy can treat 200 palms in a day at a cost of, say, only one cent per plant.

5. *Chemical Repellents.*

It might be more convenient if a chemical repellent could be found. It is rather difficult to provide adequate protection as such a substance, in addition to being offensive to the animal must not kill or make it ill. Neither must it have any phytotoxic effects on the plant.

Two promising materials have been used with some success as deer repellents in North America. One is manufactured by Harry N. Leckenby Company, Seattle, Washington, U.S.A., is marketed at \$1.8 per gallon in the U.S.A. This is a diluted nicotine preparation (1 in 200) which is applied repeatedly to the plant.

The second compound is Goodrite Z.I.P. which is a formulation of Zinc dimethyl dithiocarbamate cyclohexylamine complex in a rubbery base. This is manufactured by the B. E. Goodrich Chemical Co., Cleveland, Ohio., U.S.A., and also sells for about \$8 per gallon. It is diluted to 1 in 80 and sprayed on the foliage. This has been found to be effective in repelling deer and rabbits.

Experimenters with these materials emphasise that in no case does it give complete protection and applications need to be repeated at monthly intervals. These materials will be investigated at the Coconut Research Institute as soon as supplies are received.

Conclusion.—The damage done by straying cattle in Ceylon is enormous and the need for the protection of young coconut plants can be shewn by a single example. On one coconut estate in the Negombo District, 4 acres of young coconuts had been completely destroyed by cattle. The value of 250 coconut seedlings and the cost of preparing 250 planting holes amounts about Rs. 350/-. If the owner of this property, which was actually enclosed with barbed wire, but which contained straying un-tethered cattle, had been asked to burn this sum of money, he would have been indeed shocked.