Systematic and intensive dry cultivation in the West Coast.

The West Coast as is well known, is a hilly country. It was originally almost entirely covered by forest, evidence of which is not lacking at the present day. As the population increased, the people began to destroy the jungle, naturally in the cheapest way and that is by burning it, in order to raise food crops. With the advancement of civilisation the necessities of life continued to increase. Different kinds of crops including industrial crops were one after another brought under cultivation.

At present there are three distinct types of cultivation practised between the ghauts and the sea, namely dry land, garden and wet land. A bird's-eye-view of the country would reveal a number of rivers running westward through undulating country, each river bordered on either side by a green strip of land where generally nothing but paddy is grown. These strips would in their turn be bordered by land allotted to permanent crops grown on the woody hill slopes bordering each river valley. These wooded hill slopes would again gradually merge into the shrubby hill tops devoted in part to dry-land rain-fed crops. It is proposed to confine this note to the cultivation of the last named tract which is registered in the settlement registers as "unoccupied dry" known in English and in Malayalam as "അസ്ഥിരം പുഞ." This land is not permanently under cultivation neither is it assessed as such. The nature of the soil varies in different tracts and mainly for this reason, differences in the systems of cultivation are to be seen in South Malabar, North Malabar and South Canara.

What strikes one most concerning the prevailing system of cultivation on these dry lands is the hap-hazard unprofitable way in which it is being done, resulting in wholesale destruction of

forests. In certain localities leaf manure has now become so scarce that a head load costs from 6 to 8 annas. The chief crops commonly grown are Ginger and Paddy while Sweet potato and Tapioca are becoming increasingly popular. The shortage of jungle leaf for manuring these crops is being felt more and more every year.

In Malabar, the lands are mostly private Jenmum. The Jenmies are absentee land owners and they have no personal interest in the cultivation of their lands provided they receive their share of the income. In South Canara the dry lands are mostly Government lands and excepting in the common "Kumki" and those belonging to the Vargadars, the jungle growth is fast becoming a thing of the past. Mudebidri, Karkal, Puthur and interior of Kundapoor where jungle leaf is available, fairly intensive cultivation of dry land is not uncommon.

The dry land cultivation practices in North Malabar and Kasaragod Taluk of South Canara are typical of the practices throughout these tracts. Here the most general system of dry land cultivation is to cut and burn the jungle once in 3 to 6 years; sow rain-fed paddy in April, May and rake in the seed well immediately before the South-west Monsoon breaks. The yield of paddy varies from 5 to 10 times the quantity of seed sown (seed rate being 30 Madras Measures per acre). This is called "Punam" cultivation in Malabar and "Kumri" cultivation in South Canara. No other crop is grown on these lands for some years, but before scrub jungle has time to re-establish itself, it is again destroyed as before. The roots of trees left unburnt are dug out for the purpose of firewood. As a result we see vast areas of land devoid of any vegetation in the place of thick forest of the olden days. The evil effects of this wasteful and ruinous system of cultivation cannot be over-emphasised, and some of the reasons why the practice should be discontinued are detailed hereunder :—

(a) The soil is laid bare to the full force of the heavy downpours of rain commonly experienced in these parts. The finer particles of soil are washed away leaving a thin sterile soil incapable of growing any kind of crop profitably.

(b) The fertility of wet lands in the valleys underlying these hills is largely dependent on annual supplies of silt washed down. By removing all vegetation, the lands become so bare of surface soil that the silt brought down by the streams will be inadequate to supply the needs of the paddy lands. A deterioration in wet lands attributable to this cause is already being felt.

(c) In the absence of vegetation practically all the rainwater will immediately flow off the land instead of being retarded in its flow so as so provide a continued supply for the low lying paddy lands.

(d) The fertility of the high lying lands is known to have deteriorated to such an extent in some cases that even fodder grasses cannot subsist on them. In such cases it is only such grass as can be used for thatching, will thrive.

But it would be a great mistake to denounce a practice wholesale without suggesting an alternative. What then is the remedy? The answer lies in the adoption of systematic dry land cultivation on rational lines. This is what is being done and is being demonstrated on the Government Agricultural Station at Taliparamba.

When this Farm was taken over by the Department some 10 years ago, the dry lands attached to it, comprising an area of 6 acres was typical of the scrub jungle tracts of the locality. The first process was to fence thoroughly the whole of the estate. This was cheaply and efficiently done by erecting an earthen wall about 7 feet high and 4 feet broad at the base. This is protected from heavy rains by growing a small variety of aloe

along the top of it. The latter also adds to the efficiency of the wall by protecting the enclosed lands against the ravages of straying cattle, wild boars and human depredators. By digging a trench on the outside, this fence in addition serves to protect the dry land, by diverting the overflow of water from higher ground and by acting as a fire-guard.

This dry land is kept regularly and systematically under cultivation year after year. And the system which has proved to be such an unqualified success is here outlined in the hope that others who are interested in such lands might also adopt it.

The area under trial is divided into three equal portions for the reason that the rotation adopted is a three-fold one.

First year—Ginger ; Chillies ; or Turmeric.

Second year—Cereal crop :—Ragi or paddy.

Third year—Green manure crop :—Cowpea etc.,

The advantages of growing crops by rotation are numerous too well known to need repetition here. But the experience gained on the Taliparamba Farm by adopting a definite system of rotation on dry lands is so valuable that it deserves to be made widely known.

In the first year of the rotation Ginger, Chillies and Turmeric are crops which normally give a net profit varying from Rs. 100 to 200 when grown on lands which previously only gave an yield of 150 to 300 Madras Measures of paddy once only in every 3 to 6 years, valued at about Rs. 15 to 30. A note on Ginger has been published in leaf let No. XIII of 1911 which may be obtained free of cost.

In the second year the grain crop—Ragi or dry paddy will profit considerably by the residual effect of manure of the

previous year and 400 to 500 Madras Measures (about 1000 lbs. of paddy may be expected.

In the third year the land is given a rest and a crop is grown with the primary object of returning it to the land so as to enrich the soil preparatory for next year's crop.

In the fourth year the land is again ready to take such heavy yielding and profitable crops as Ginger, Chillies or Turmeric and the rotation is then repeated.

It must not be forgotten, however, that the land must in the first instance be divided into plots approximately equal in area.

	1st year.	2nd year.	3rd year.
First field.	Ginger Chillies or Turmeric.	Cowpea.	Ragi or Paddy.
Second Field.	Ragi or Paddy.	Ginger Chillies or Turmeric.	Cowpea.
Third Field.	Cowpea.	Ragi or Paddy.	Ginger. Chillies or Turmeric.

In dividing up the land thus, it must not be forgotten that a fair-sized reserve should be left where permanent jungle is allowed to grow. The worst and steepest land on the estate may be allotted for this purpose. In course of time this jungle should provide ample leaf for manuring the dry lands and ample firewood to meet the needs of the occupant without materially affecting its value. But to do this it is necessary to protect and

guard it as already indicated. The actual area to be cultivated will in each case depend very largely on the size of the estate, but no definite rules can be put down.

It is gratifying to note that as a result of experiment and demonstration on the Taliparamba Agricultural Station and the preaching of the departmental officers, large areas of dry land are already being fenced in for intensive cultivation on the lines indicated above. Many ryots have been benefited by the adoption of this system. In place of the customary extensive, open, uncultivated spaces one cannot fail to notice all over the West Coast and particularly in North Malabar a number of fenced patches where crops are now grown by rotation.

Further details of information concerning the best method of cultivating dry lands on the West Coast may be obtained by a personal inspection of the Government Agricultural Station, Taliparamba, or by writing to the Farm Manager.

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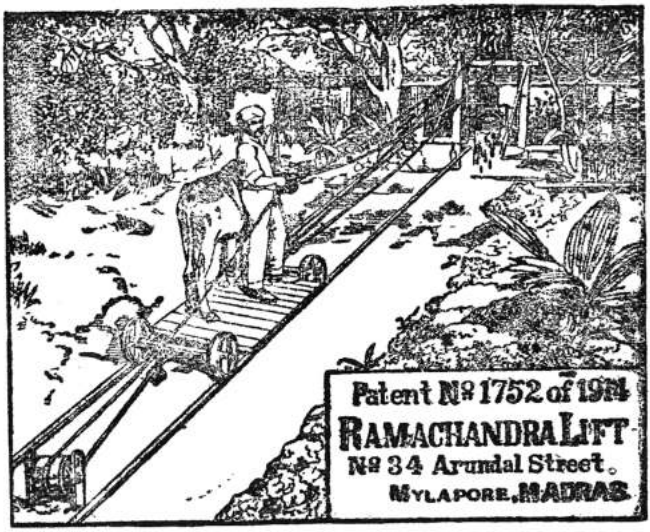

Ramachandra Water-lift.

In the above wood-cut showing an illustration of the eastern bucket and rope drawn by the help of the western iron horse is an example of the east and west working together for the common good of India, where water-lifting is the greatest problem of the day.

In tracing the history of the water-lift in India the first inventor was the one that invented the palmyra leaf bucket that is now used in the Tinnevelly and the Godavari Districts. The next inventor was the man that stripped the bark of the tree and used it as a rope. Leaving aside the various inventors that made the wooden, leather, and metallic buckets, pulleys &c., we come to the greatest and most ingenious of our ancients namely, those that used the live-weight of men and animals on a see-saw and on inclines. Our Piccottah and the country Kavalai arethe only two water-lifts that stood the test of time. It is therefore evident