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FRITCHARD, C. H.

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TIMBER CONSERVATION ON TAKAWEVA

States further as to advantages to Prot. by the introduction of a wood-distillation plant.

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3, Fair View Road,
Banbury,

30th December 1919.

Sir Herbert Read, F.C.S., C.M.G.,
Colonial Office.

Sir,

I mentioned, in my letter to you of 14th October last, that a wood-distillation Plant would produce charcoal of high quality and also wood-tar,

The charcoal would find a ready and profitable market in Egypt, through Port Sudan or Suez, but there is another and, perhaps, a more urgent use for charcoal and wood-tar in the Protectorate itself. That territory has no coal-fields and the Uganda Railways use wood-fuel in their locomotives. Under the present system, the wood, I submit, is, to a large extent, wastefully used, whereas, if charcoal and wood-tar are produced, as I have suggested, in the forests, briquettes made of these two products and pressed by machinery would form an easily handled fuel. These briquettes would pack closely in Railway waggons and thus be even more economical in freight than coal, if that were procurable, and certainly cheaper than wood of various dimensions and irregular surfaces.

This suggestion was put forward, in 1909, by Mr. D.K. Hutchins in his Report on the forests of British East Africa, and is emphatically endorsed by Professor G.S. Boulger, F.L.S., F.G.S., of the Imperial Institute, to whom I have submitted all my proposals in this respect. Professor Boulger assures me that these proposals are entirely practicable.

The following extracts from Mr. Hutchins' report show that, besides producing locomotive fuel cheaply, a wood distillation plant (of sufficient capacity, of course) will give other by-products which are readily saleable. The comparisons between the hauling power of coal and wood, and the saving effected

by using the latter instead of the former, are also useful. Mr. Hutchins in quoting Mr. Hutchins so largely is to show that by using charcoal and wood-tar briquettes in place of ordinary wood, great savings are effected by the Railways of the Protectorate.

Mr. Hutchins says:— "Taking the best hard wood at half the hauling power of coal, the Railway now (1909) gets its wood for one-third the cost of imported coal at Mombasa, one-fifth the cost of imported coal at Nairobi, and about one-seventh the cost of imported coal at the Lake As a means of utilizing the quantity of waste wood in the forests of the Protectorate, the making of compressed charcoal bricks (briquettes) seems worthy of consideration. For this purpose it would be necessary to make charcoal in a kiln. This would produce, besides charcoal, wood vinegar, tar and creosote. One hundred pounds of wood (dried at 300°) yields, as calculated, about 30 lbs. of charcoal and 70 lbs. of gaseous products. Of the 70 lbs. of gaseous products, 63 lbs. is crude wood vinegar, from which 4 lbs. of pure Acetic Acid is obtained. The wood creosote would be used for seasoning sleepers. (Note: If the sleepers are treated by the Powell process, creosote is not required, but the South African Railways would probably be glad to take all the creosote that the Protectorate could supply.) The tar would be used for coating the charcoal into bricks. There would be a considerable saving in the use of such a brick fuel in place of wood fuel, particularly where it had to be carried long distances, as in the case of the steamers on Lake Victoria Nyanda. It might even be possible to make it in sufficient quantities to supply the sea-going steamers at Mombasa. Its calorific power would be equal to (or superior to) coal and be more than double the calorific power of the best hard wood. In America, carbonizing plants have been erected on a large scale to utilize the sawdust from the saw-mills.... Charcoal from these factories is produced at astonishingly cheap rates. The chief risk fuel is free from the sulphur in coal and thus produces the billers less. It also produces less smoke.... The Forests should, besides, furnish sleepers and building-material.... The cost of native wooden sleepers supplied to the Uganda railways is £1.50 each In South Africa (3'6" gauge) metal sleepers have been discarded after prolonged trial and the creosoted yellow-wood sleepers have found universal favour. The metal sleepers are liable to crack, of doubtful durability. Yellow-wood must be creosoted or injected with an antiseptic. It is useless without." (D.E. Hutchins. op.cit. pp. 51-2, 55-6.)

I now quote Professor Boulger, who has known the Powell Process since its inception. He says:-

"Creosoting is of little use unless injected under pressure, a far more costly process than impregnation by boiling in an ordinary tank with oil. The experiments conducted by Mr. R. C. Pearson in India (a copy of whose report is retained by Mr. J. A. V. Flood) have conclusively demonstrated the value of the Powell Process for hard-wood and soft-wood alike in securing thorough penetration of the antiseptic, even into green wood, at a small cost, in closing small cracks and simultaneously seasoning the wood, and, when modified for tropical use, in rendering the wood immune from termite attack. The colour is unimportant, crude sugar - such as the "jaggery" already produced in East Africa - will answer the purpose of this process and, for Railway sleepers, the complete subsequent drying of the timber (one of the most difficult and costly parts of any Process) is unnecessary."

The large forest of Utwani, round Witha, and that still nearer to Kipini, is undoubtedly well supplied with fine trees down to the water's edge, so that there is no question as to an ample supply suitable for a variety of purposes, including fuel, sleepers, house- and boat-building, cabinet- and furniture-making, and distillation.

With regard to the dead wood, already more or less attacked by the fungi of decay, such as much of the standing Mangrove timber already stripped of its bark, I should feel inclined either to try the suitability of such stuff for charcoal, or simply to destroy it to check the spread of the fungi.

Apart altogether from the value of the forest-products, the clearing of this malarious coast forest is as important for health as the conservation of the forest of temperate latitudes and the land, when cleared, would be admirably suited for the cultivation of coco-nut, pineapples, bananas, capsicum, or perhaps, Para rubber.

You will see that the fore-going opinions largely widen the proposals originally laid before you, but there is yet another source from which the Protectorate can derive revenue by the proper use of its timber assets. I attach a cutting from the African World of December 28th, 1918, from which it will be seen that a significant furniture- and cabinet-making timber trade is found in East Africa. I submit that it would be feelingly wasteful to make sleepers or charcoal of such valuable timber - the Mangrove and other trees would yield all that is required in those directions and the bark of the Mangrove can be sold as before. There is undoubtedly a market for

timber in the United Kingdom. By Powell this timber in the forest, it would not only be exported in thoroughly seasoned condition, but, having been converted before treatment, would be much more portable than when in the log, always an expensive method of handling any timber, and would enable buyers in this country to see exactly what they were getting for their money.

Building- and furniture-timbers, intended for use in the Protectorate or any country in which they would be subject to termites attack, would be treated in special Powellizing solutions, to which arsenic had been added in certain known proportions.

I would further suggest that, as Lime is so much required as a manure in many parts of East Africa, the burning of the coral rock of the coast with Mangrove fuel might well prove a valuable and profitable industry.

Realizing, as I do that the handling and transportation of timber is necessarily costly, I have been careful to confine my proposals to forests from which sleepers, fuel, furniture-timber and by-products of the Plants I have suggested can be cheaply dispatched to Mombasa by sea. I have reason to believe that owners of timber concessions in the Protectorate cannot always profitably dispose of their timber on account of the heavy costs of road transport. That trouble will not affect any industry established at Kipini, or elsewhere along the coast, where dhows can be moored and loaded.

While it would be only wise to commence with one plant, I think it is clear that the great timber resources of the East Africa Protectorate will justify the erection of similar plants at other points in the near future, as experience may dictate. In the meantime I respectfully submit that steps should be taken to guard against the possible sale, by the Colonial Board, Ministry of Munitions, of the five wood distillation factories described on pp. 14-15 of "Surplus" Report No. 1919. Some, at least, of these Plants should be war-marked in East and West Africa pending decisions being taken regarding my proposals by the Governors of the Protectorate and the Colonies concerned.

Summary of proposals as follows:-

1. The production, at a comparatively low cost, of portable and efficient fuel for locomotives and steamers.

2. The production of really serviceable and inexpensive sleepers of local timber, as against the importation of local sleepers, which are already costly and may

very possibly rise in price in the near future.

(4) The production of rapidly seasoned building and fire-resistant timbers, immune from termite attack.

(5) The production of oils for agricultural purposes, such as linseed oil, and other essential oils, including turpentine and rosin.

(5) The production, after local requirements are met, of croscote, acetic acid, acetone, acetates, wood-tar and other by-products, for which there are always markets.

As I have already said, in my letter of 14th October, every part of every tree can be profitably used.

I am,

Sir,

Your obedient servant,

C. W. Fitzhard.

EAST AFRICAN WOOD.

Referring to the red woods also as Messrs. J. and A. R. McCrae's, the well-known furniture dealers in British East Africa, the "Standard" says that a London West End furniture expert would "go into ecstasies over the beautiful East African Woods, Uganda Mahogany with its exquisite pattern-grain, the famous deep red Uganda mulla wood, the lovely yellow-tinted olive, from which the great stock of furniture is made."

The woods of British East Africa, like those of the late German Colony, are excellent for furniture and cabinet-making. Germany, in the days before the war, made the most out of her colony, as is evidenced by the furniture she placed on the market, and in interior fittings of her luxurious transatlantic liners and trains de luxe, fitted up as they were with S.E.A. woods. E.E.A. woods says the "Standard" were not well-known before the war, "because the wood for cabinet-making needs years after it is cut in which to season, and the country was too young to season its fancy woods for abroad. The maturing of the woods has been the trouble in E.E.A.; furniture making had to wait for it."

If the above statement is true of B.E.A., how is it that it will not apply to S.E.A.? The maturing of the wood is similar in both cases, but whereas in the German Colony the wood industry forged ahead, in our colony it lagged. It seems to us that the real reason is that in S.E.A., greater interest was taken in this industry (almost likely under Government auspices) than in B.E.A. It is to be hoped that this altered when things are normal again, for the woods of East Africa are glorious material for the cabinet-maker. As the "Standard" points out, the wood will "go on colouring quite rapidly in the side-boards, cheffoniers, flower-stands, mirrors, bedsteads, dining-tables, octagonal tea-tables. East African mahogany for example, shades quickly by use into a deeper and richer red till it attains the beautiful red black of an Adam's table."

"Some fine day, after war, in the new age when the many will have money to spend upon artistic tastes instead of the few, some of the McCrae furniture now to be distributed will find its way to London, and then B.E.A. will be discovered in this direction by the world."

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Li, 5 July 20

NOTE.

not sure if
Dunbar letter
(1916)

In continuation of my
ref. no. 1157 of the 5th of
November, 1916.

I enclose to you,
for your comm., a

copy of a further letter

from Mr. C.H. Pritchard

amplifying the

proposals which he

in Pritchard
30 Dec.

he has already submitted.

(Sgd.) L. S. AVERY