

proper to appoint a
 small permanent committee ^{reference}
 to advise him in
 returning questions &
 he would be much
 obliged to the Board
 if they could select
 representatives to ^{representations}
 serve on the Committee
 & give him the benefit
 of the valuable experience
 which the Board must
 have obtained in matters
 of the kind.

Done
 1871

EAST AFR. PROT.



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No. 1005
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(Subject)

Report on Timber Samples

Drawings

Report on
 of 17
 1871

Done
 1871

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Rec^d 8 NOV 05

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Imperial Institute
Director
London, E.C. 4
1905

IMPERIAL INSTITUTE
OF THE
UNITED KINGDOM, THE COLONIES AND INDIA

IMPERIAL INSTITUTE ROAD, LONDON, E.C. 4



4 November, 1905

Sir,

I have the honour to forward for the information of H.M. Commissioner at London, a report on *Juglans* and *Podocarpus* timber from the East Africa Protectorate, collected by Mr. A. S. Grogan, which have been deposited at the Imperial Institute at your request.

Mr. Grogan has been furnished with a copy of this report, and he has informed me that it will be of great value in connection with the enterprise in which he is engaged.

This report will be included in the return made to the Board of Trade respecting the work of the Imperial Institute.

I have the honour to be,

Sir,

Your obedient Servant,

Wm. R. D. Dyer

Under Secretary of State,
Colonial Office,
London, E.C. 4.

16.12

Emerson

G. O.
39661
Recd
Recd NO 05

IMPERIAL INSTITUTE,
(SOUTH KENSINGTON, LONDON, S.W.)

Report on samples of timbers from the British
East Africa Protectorate.

133

by PROFESSOR WYNDHAM E. DUNSTON, M.A., F.R.S., Director.

These samples of timbers were sent to the Imperial Institute by Mr. E. G. Graham and are referred to in a letter dated the 21st June 1905 which gives the following information regarding them. They have been examined with a view to their commercial utilisation at the request of the Colonial Office.

Three samples of wood were collected in the Aldam Forest situated west of the Eldama Ravine Station. The three samples of soft wood are from *Podocarpus* probably the *Podocarpus foletta* (P. H. J.). The three samples of red wood are from a juniper presumably *Juniperus procera* (Hooker).

These two timbers form probably 95 per cent of the contents of the forest in the Aldam Ravine; the other five per cent consists of hardwoods. They practically do not appear below an altitude of 7,000 feet and the proportion of these woods to hardwoods increases with the altitude. They are distributed through all the high altitude forest areas of British East Africa, which I have seen, but their proportion to other harder woods appears to be generally only about 10 to 25 per cent.

I attribute the peculiarity of the Eldam Forest to its sheltered position, lying, as it does, between the

Kenia

• Asia, the Elugo and Londiani Mountains and to the
 • exceptionally heavy rainfall which it enjoys. On the
 • 1,000 ft. contour and in the pocket of this forest area
 • the trees grow to great perfection and the general average
 • of timber contents appears to be not less than 20
 • standards to the acre; in some portions it rises to 50
 • standards. The Podocarpus and the Juniper are about
 • equally distributed. The following facts about each
 • kind may be of use.

• Podocarpus.

• These trees are almost uniformly perfect. They
 • taper very slightly and show long, symmetrical straight
 • trunks measuring 20 to 120 feet to the first branches; the
 • diameters at 6 ft. from the ground run from 1 ft. 6 in.
 • to 3 ft. 6 in. The wood seems to be extraordinarily free
 • from knots. There is reason to believe that the wood
 • shows no resistance to the attacks of white ants, and
 • its durability under exposure is probably not greater than
 • the mean of the various pines.

• Juniperus.

• These trees are not so uniformly perfect as the
 • Podocarpus but in the interior of the forest they were
 • generally sufficiently perfect to excite the admiration
 • of the two Canadian lumbermen who were working with me.
 • According to these gentlemen they are immeasurably
 • superior in this respect to the American junipers. In
 • some of the outlying, and more exposed parts of the forest
 • they are somewhat marred by the development of buttresses
 • and the undoubted presence of spikes and 'wind shakes'.

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3.

*Their height to the first branch runs from 20 ft. to 30 ft. and their diameter 3 ft. from the ground to 1 ft. in. to 7 ft.

*They taper much more than the *Podocarpus*.

*The colour of the wood ranges from light red to a very deep blood red, but it fades considerably on exposure to the open air. The cedar scent is very striking when the wood is freshly cut.

*Its resistance to decay appears to be very remarkable and fully equal to that character of *Juniperus virginiana*. We cut into a number of old windfalls some of which showed evidence of having been down for fully 10 years and despite the dampness and confined atmosphere of the forest the heart was in every case quite sound. It appears to resist decay to the last fibre.

*A small log was brought out of the forest and left by the roadside near the Savine station for six months, in a locality where white ants were very numerous. They had built mounds along both sides of the log and had cut grooves along the sapwood below the bark, but in no part had they touched the red wood. The heart, however, of this log had remained very strong.

Examination of the Timbers.

The samples of timbers were too small to permit of the determination of their mechanical constants, but were large enough to enable trials of their working qualities to be made. They were therefore sent to Mr.

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Herbert Stone, who very kindly undertook this work and who has supplied to the Imperial Institute the following report on the working qualities of the two timbers:

Podocarpus Timber.

"The yellow wood is a good example of the class of timber afforded by the various species of the genus Podocarpus to which the common Outeniqua and Upright Yellow woods of Cape Colony and Natal belong. It is so similar to these woods that its qualities may be expressed in almost identical terms, that is to say, that it is a straight grained, easily worked wood suitable for house building, and such purposes as those to which Deal is put. It should be of great value in the locality in which it grows and wherever the freight enables it to compete with Deal. It is unlikely that it will pay to export to Europe, as the freight alone will cost about 7d. per cubic foot so that after paying all charges there would be nothing left for the exporter. The converse would be the case in the South African market where timber is scarce, and Deal is imported from Europe in large quantities. There, this Yellow wood would have the advantage of a shorter voyage and being of much larger scantling and similar to the already known Colonial Yellow woods, it would in many cases be preferred to Deal. It planes, saws and works without trouble, and is a capital carpenter's wood, though not suitable for turnery. It polishes well without much trouble, but not being in any way ornamental it will be little employed for highly finished articles.

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5.

*Weight No. 1, 35½ lbs. No. 2, 36 lbs. per
 *cubic foot. It breaks with a fracture indicating brittleness.

Juniperus or Pencil Cedar.

*The three specimens of Pencil Cedar are worthy
 *of remark.

*There appear to be two varieties whose chief
 *differences are in the width of the white sapwood. No.
 *1 has a thick sapwood some 1½ inches wide. The wood is
 *of excellent colour, straight in the grain and in every
 *respect similar to the Florida Pencil Cedar from which it
 *is indistinguishable. I do not think that anyone in the
 *trade could distinguish this wood from the commercial
 *Pencil Cedar.

*It turns and polishes equally well and works
 *in all respects the same. This wood has an important
 *future before it, and inasmuch as the great bulk of
 *Florida Pencil Cedar now coming to market is of small
 *dimensions and in far too many cases defective, such
 *immense loss as this specimen was evidently cut from will
 *be eagerly sought after. I venture to say that if proper
 *precautions are taken to avoid sending imperfect logs, as
 *logs of indifferent colour, this wood will rapidly
 *displace that coming from America. Weight per cubic foot
 *37½ lbs.

*Specimen No. 2 has a thin sapwood not exceeding
 *½ inch. It is not of equal quality to No. 1, being of
 *indifferent colour, i.e. it is too light coloured in

"parts. While no doubt useful for many purposes to which
 "Pencil Cedar is put it will scarcely meet the exacting
 "requirements of the pencil and pen-older makers. I
 "strongly recommend that this quality be not exported other
 "wise the whole of the wood from the locality may be
 "doubted, nevertheless its value for many purposes in the
 "locality will be very great. I do not gather from the
 "details supplied with the specimens whether Nos. 1, 2 and
 "3 are all of the same variety or from the same locality.

"No. 2 appears to me to be upland grown wood, and
 "Nos. 1 and 3 from lowland and swampy districts. Weight
 "of No. 2 per cubic foot, 41 1/2 lbs.

"Specimen No. 3 is of similar quality to No. 2.
 "Weight per cubic foot, 39 lbs.

"All the specimens were sound, sweet-scented and
 "very dry. They all turn, plane and polish excellently
 "these being the chief needful qualities of Pencil Cedar".

In addition to examining the working qualities
 of the timbers Mr. Stone submitted samples of the Pencil
 Cedar to various firms in this country who use timber of
 this type and as a result Messrs. S. Gardner and Sons,
 Timber Merchants, Bootle, near Liverpool, have sent to
 the Imperial Institute the following request for supplies
 of the Pencil Cedar from British East Africa.

"No. 1 sample, which has a thick sap wood.

"Of this we should like 50 to 60 logs, 10 feet
 "or upwards long, 10 inches and larger in depth, to have
 "the sap taken off and to be squared. To be clean, that
 "is with few knots; the freedom from knots, soundness and
 "straightness.

"straightness enhances the value.

"No. 2 sample, thin sapwood.

"This may come in the round logs of dimensions
"as given above, but we understand that larger sizes are
"available, and in such case we want them as large as
"possible. Quantity to be about 30 - 40 logs.

"The price will be an important factor, as in
"the introduction of new woods English buyers are very
"conservative, and require inducements to use new woods.
"We estimate that if the wood can be delivered in Liverpool
"as stated in the foregoing paragraphs at or under £7 10
"per ton we can make the business a success.

"In the event of shipment being made, we expect
"such wood to be sent as usual to subsequently supplied
"that is, an average of the size and quality that the
"district could produce.

"Rough knotty wood is scarcely worth the freight
"and naturally will not be shipped.

"If there is any doubt about the wood being
"fully equal to the description we have stated we require
"please only send 3 or 4 logs of each so that we may see
"exactly what can be shipped, and what we can rely upon.

"The wood to be shipped by steamer to Liverpool".

It would therefore appear that there may be a
very satisfactory opening for these woods in the British
market. Messrs. Gardner's proposals should if possible
be adopted as they may lead to immediate commercial
development.

(Signed) H. Gardner R. Dunlop

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