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Transactions of the Botanical Society of Edinburgh

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tped18>

IV. Report on the Conservation of Forests in India

Dr Cleghorn

Published online: 01 Dec 2010.

To cite this article: Dr Cleghorn (1860) IV. Report on the Conservation of Forests in India , Transactions of the Botanical Society of Edinburgh, 6:1-4, 237-241, DOI: [10.1080/03746606009467736](https://doi.org/10.1080/03746606009467736)

To link to this article: <http://dx.doi.org/10.1080/03746606009467736>

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tuberous perennial root. It will be described in our catalogue of the plants of the district. We also got two handsome new *Osbeckias*, and a very interesting African form, *Alectra*, new to India, and not described by Bentham. I hope you got a parcel of Lucknow plants I sent you. I shall send home the catalogue, as I merely sent home the numbers on the specimens. I have a large collection, and plenty duplicates of High Himalayan and Tibetan plants, which I gathered in 1857."

IV. *Report on the Conservation of Forests in India.* By Dr CLEGHORN. Communicated by Professor BALFOUR.

Dr Cleghorn says:—"During the past year I proceeded on my first tour of inspection, traversed Mysore, and visited the depôts at the mouths of nearly all the rivers on the Malabar coast, examining the greater part of the western ghauts with a view to ascertain the exact state of the Government forests, their extent and capabilities. I travelled through the most wooded portions, along the chain of ghauts, ascending and descending by the mountain passes, from the Bombay frontier down to Ponany. I afterwards went across the Anamallay Hills, and round the slopes of the Neilgherry Hills; I also made a circuit of the Wynad, and twice visited the Conolly plantations at Nellumboor, being altogether eight months absent from the Presidency. In the beginning of the century an immense almost unbroken forest covered the western ghauts, from near the water's edge to the most elevated ridges left to nature, thinly peopled, abounding in wild animals, and all the higher portions, without exception, covered with timber; and now the passing traveller, looking down from the higher peaks of Coorg or Malabar, conceives that an inexhaustible forest lies below him; but as he descends the ghauts, he finds that the best timber has been cut away, and that the wood-contractor is felling in more remote localities. I speak especially of Teak, Blackwood, and Poon spars, which are every year becoming more scarce in accessible situations. The practice in this country has been the converse of that in Europe, where the soft wood is thinned out and the hard wood left; here the valuable kinds

are removed and the scrub left. By one of these authorities, burning the jungles was recommended as a sanitary measure, and to diminish the number of wild animals; but circumstances have much changed. Now the axe of the coffee-planter and of the coomree-cultivator has made extensive and often wanton havoc, devastating a large portion of the area of the primeval forest. The trees are classified according to size—1st class, 6 feet in girth; 2d class, $4\frac{1}{2}$ feet; 3d class, 3 feet and upwards; 4th class, under 3 feet, seedlings.

TEAK (*Tectona grandis*).—This invaluable wood has received the special attention of the department, and, I may say, has occupied at least two-thirds of my own time during the past year. Along the whole length of the Malabar coast from Goa to Cochin, there is now very little of this wood in a ripe state on Government land below the ghauts, and there are only three localities above the ghauts where I found Teak in abundance, and of good size—viz., 1st, The Anamallay Forest, in Coimbatore; 2d, Wynad and Haggadevincttah (partly in dispute between Mysore and Malabar); 3d, Goond Tableau, North Canara, near Dandellie. The Anamallay Forests have been the subject of annual Reports to Government since 1848, when their importance was first declared by Captain F. C. Cotton (*Madras Journal*). The forests of Wynad and Haggadevincttah Teak, on the borders of Mysore and Malabar, are of great value, and stand second in importance. The average price of Teak at the quarterly auctions held at Mysore has been almost exactly the same as at Anamallay, about one rupee per cubic foot. The Canara Teak is of much smaller scantling generally than that of Wynad. It has the advantage of water-carriage to the coast, not possessed by the two last; but it has for some years been chiefly obtained for naval purposes from the banks of the Kalla Nuddee, where it emerges from the Soopah Hills, and the supply has gradually been sent down from more distant localities, as in Malabar, where the Teak is now cut by the Teroopaud of Nellumboor, just under the Neilgherry Peak. The Goond Forest is the chief remaining reserve in Canara. I saw here several thousand trees on an elevated plateau with precipitous sides. The trees are well grown and ripe, conserved by their inaccessible position, which has been rarely visited by Europeans.

Poon spars (*Sterculia foetida*) are becoming very scarce, and consequently are perhaps more valuable than Teak; young ones, especially such as are in accessible places, are most carefully preserved.

Blackwood (*Dalbergia sissooides*).—This valuable wood has risen much in price. Indents were received during the year, both from Madras and Bombay gun-carriage manufacturing, each for 5000 cubic feet. There is not much Blackwood remaining in the Anamallay Forest, but there is a considerable quantity in the escheated forest of Chennat Nair, and it is abundant in the Wynad and Coorg.

Sappan Wood (*Cesalpinia Sappan*).—This important dye-wood has engaged my attention. It appears to grow with great luxuriance in South Malabar, and is cultivated rather extensively by the Moplahs, who plant a number of the seeds at the birth of a daughter. The trees require fourteen or fifteen years to come to maturity, and then become her dowry. I saw more on the banks of the Nellumboor river than anywhere else; why it should be there in particular is not obvious, as Malabar is generally uniform in its character. A better system of cutting and cultivating the Sappan is desirable, and the dye-wood is damaged, I believe, by being allowed to float in salt water.

The *Sandal-Wood Tree* (*Santalum album*) in Mysore, Canara, Coimbatore, Salem, and a little in North Arcot, has received much attention. It would appear that the spontaneous growth of this tree has increased to a considerable extent.

The "*Gutta Percha Tree* of the Western Coast," so called (*Isonandra* sp ?) has been traced from Coorg to Trevandrum. All the reliable information procurable has been condensed into a memorandum, and a large sample has been transmitted to England for report as to its suitability for telegraphic and other purposes.

Catechu (*Acacia Catechu*).—The enhanced value of cutt has caused an unusual destruction of the tree.

Kino.—Two thousand trees of the Kino tree (*Pterocarpus Marsupium*) were seen along the roads through the Wynad, notched, for the extraction of Kino, which is taken to the coast, where it meets with a ready market, and is exported in wooden boxes to Bombay.

Bamboos.—Immense quantities of fine bamboos are floated

down the various rivers of the western coast. They constitute one of the riches of the provinces. They are ordinarily 60 feet long, and 5 inches in diameter near the root. These are readily purchased standing at five rupees per 1000, and small ones at three and a-half rupees per 1000. Millions are annually cut in the forests, and taken away by water in rafts, or by land in hackeries. From their great buoyancy they are much used for floating the heavier woods, as Mutte (*Terminalia tomentosa*) and Biti (*Dalbergia arborea*), and piles of them are lashed to the sides of the paltimars going to Bombay. The larger ones are selected as out-riggers for ferry-boats, or studding-sail booms for small crafts. In addition to the vast export by sea, it is estimated that two lacs are taken from the Soopah talook eastward. The Malabar bamboo is much smaller than that of Pegu (*Bambusa gigantea*), which is eight inches in diameter.

Mode of Floating Timber.—It is curious to see the clever management of the floaters, who are a distinct class of persons. Rafts are of all sizes, usually longer than broad, and the logs bound together by the stringy bark of various trees, and stout branches passing through the drag-holes at right angles to the log. In the centre of the raft a small hut is generally made of thatch, or bamboo laths, covered with Palmyra leaves; in this the floaters are sheltered at night. It is not usually considered advisable to float logs when the river is at the fullest, as the raft is apt to go over the bank and be stranded. Numerous logs may be seen high and dry all along the sides, and the following year the flood lifts them. At night floats are brought to under deep banks, in deep water, they are then tied to the trunk of some adjoining tree. Occasionally the banks fall in, and serious accidents occur.

Coffee.—The successful cultivation of the coffee plant is extending remarkably, and applications for grants of forest lands pour in upon the revenue authorities. In the Sisipara Perambady and Sumpagoe passes vast clearings are being made. In the Coonoor Ghaut six large plantations may be seen, and there are very large and numerous holdings, above thirty, in the Wynad, which from year to year will increase. The plant has succeeded admirably in Mysore, and there are patches of cultivation in Madura, in and even North

Canara. I may observe that in granting forest land, it seems to me that while the destruction of forest (Teak, Ebony, and Poon spar excepted) for *bona fide* cultivation may be considered legitimate, yet the preservation of the fringe along the crest of mountain ridges is of special importance in a climatic point of view, and this should never be given over to the axe. As these mountain crests are not suitable for the growth of coffee, the restriction cannot be complained of.

Tea.—I think it right to bring to the notice of Government the thriving condition of a tea plantation near Coonoor, belonging to Henry Mann, Esq., who has devoted much attention to it, and has spared no expense. This is a very interesting experiment. The best varieties of the shrub were imported from China in 1854, the seeds having been given to Mr Mann by Mr Fortune on his return from the tea-growing districts. There are now about 2000 vigorous plants, and to ensure success it seems only necessary to procure a supply of workmen to teach the manipulation and separation of the leaves. I have issued a general instruction to the forest assistants in a circular, and I try to persuade each to keep a small arranged herbarium of flowers and fruit-bearing specimens of all forest trees and their varieties, with notes. By inviting them to do this, I trust some will become at least observers, if not botanists. I am preparing a manual of Indian botany, which it is hoped may be a useful guide to the botanical riches of the Presidency.

Mr Murray exhibited some recent cones from California.

10th March 1859.—ANDREW MURRAY, President, in the Chair.

The following Candidate was balloted for and duly elected a Resident Fellow :—

THOMAS CAYZOR, Esq.

The following Donations to the Society's Library were laid on the table :—