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203

F. Blasco, Montages du Sud de l'Inde: Forets, Savanes, Ecologie. Institute Francis de Pondicherry, Travaux de la Section Scientifique et Technique, Tome X, Fascicule 1, 1971. Madras.

p8) In 1812, Key estimated 2,516 ^{inhabitants} ~~of~~ ~~habitants~~. And in 1821, estimated 4,353, inhabitants in 160 villages. Kundah was uninhabited.

Timber exploitation also increased during this period. The Forest Department extracted 35,140 m3 of teak between 1857 and 1910 from the ^{Mu} ~~M~~Madumalai forests for the railways and for export to Cylon. ^{ef}

The forests of the slopes were also rapidly denuded. On the Sigur forests, 38 tonnes/yr. of sandal were extracted between 1880 and 1900, and only 6 tonnes/yr. between 1901 to 1907. In addition, ~~Di~~ ^{of the} ~~procarpus,~~ ~~marsupium,~~ ~~Lagerstroemia lanceolata~~ and ~~Anogeissis latifolia~~ have gone rare. ^{latifolia}

During this period, a lot of exotic species were introduced on the hills. The necessity to acclimatize the exotics had been recognised very early. And whereas the endogenous trees produced 1/2 tonne of dried wood ^{per} ~~pinacre,~~ Eucalyptus globulous produced 25 tonnes under the same conditions.

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72

Anonymous, (1939), The Madras Forests: Compiled in the Working Plans Circle, Madras Forest Department, Govt. Press 1939, Madras.

p18) "Difficulties encountered in meeting the demands of the Bombay dockyards for teak lead Mr. Conolly, the collector of Malabar, to begin the teak plantations of Nilambur in the early forties. This earliest beginning of systematic forest management is also one of the most successful. Though teak lost its supreme importance in ship building long before Mr. Conolly's plantations came into bearing, the work has gone from strength to strength, and today the Nilambur plantations, still rapidly expanding, are among the most productive and valuable forest properties of their size in the world."

"The period of railway construction was a time of heavy inroads upon the forests. By the early sixties, serious anxiety regarding the ~~---~~ forest resources in many parts of India caused the government to undertake a general enquiry which resulted in the modest beginnings of the Indian forest service."

"In 1924 some 3,400 sq. miles of forest of mainly local value were transferred to the control of village panchayats some of these have taken their responsibilities seriously, but on the whole misgivings are felt. In its latest review of the management of these forests, the Board of Revenue remarks. "Most of the collectors report that the ordinary revenue staff has not been able to devote the requisite attention to the panchayats with the result that many of them are left to take care of themselves. The forest has in consequence deteriorated to some extent."

"The function of the evergreen forests is mainly protective. They clothe the almost precipitous slopes of the hills in a rainfall zone of 200 to 300 inches a year, regulating the flow of water in all the west flowing streams and protecting the upper waters of many of the rivers flowing

eastward to irrigate wet lands in the dry districts. They must therefore be worked with the utmost caution to keep unimpaired their protective nature. This is done by a system of careful selection fellings with strict safeguards. The principal outrun is sleepers of *Mesua ferrea* and *Hopea parviflora*, sawn in the forest and supplied under contract direct to the railways."

"The protective value of the deciduous forests, through great, is not so vital as that of the evergreens, for they occur generally in more level country and in regions of less ----- rainfall. Partly for this reason and partly because their silvicultural management is better understood, a more intensive exploitation is permissible. The system in vogue is one of clear-felling suitable areas and replanting them mainly with teak. The areas unsuitable for conversion into plantations are worked under conservative selection fellings. It is from these forests lying mainly in Malabar (Wynad and Nilambur), in south Coimbatore (Amuandals) and in the Biodanard district that the bulk of our timber comes from.

"Timber contributes 30 per cent to the total forest revenue, fuel 14 percent, sandalwood, grazing and minor produce each about 12 per cent, bamboos a per cent and miscellaneous items make up the remaining 11 per cent."

742
75
Anonymous, Manual of Forest operations in the Madras Presidency. Scottish Press, Madras, 1864.

p45) "The Mudumallay Forests. They have been rented by the government from the Nellambur Rajah for a period of 99 years; extensive felling has been carried on for some years and most of the ripe teak has been felled; there is however a large supply of young trees coming on which will be of great value in future years for the supply of the Nilgiri." "Seegur Forests: These forests contain teak, but the ripe trees have almost all been felled. The forest was very much exhausted by unscrupulous contractors before conservancy came into operation; the young teak trees are growing well, and though this forest will never yield such fine teak as Anamallay, Mundumallay and Wynad, we shall have a good supply of moderate scantlings in future years. These forests also contain some other valuable jungle timbers, the principal being Vengay (*pterocarpus marsupium*). The chief revenue from these forests however is the sandalwood (*santalum album*). The trees are very much scattered, being often in the midst of cultivation and in the hedge rows."

"The Wynad Forests: The Teak forests lie along the Mysore frontier, from the confines of --- in the north, to Mudumallay in the south, a distance of about 40 miles, the breadth being about 6 miles. A portion of this belt is government property, and a portion belongs to Mysore. The central portion is the richest in teak; and it contains about 50 good trees to an acre. The value of these teak forests is very great, they were considerably damaged by Thakkal before conservancy came into force, acres of fine teak being annually burnt for temporary cultivation, this has now been entirely put a stop to, and the forests are strictly conserved these forests (in addition to teak) contain much valuable blackwood (*Dalbergia latifolia*). Hone (*pterocarpus marsupium*), Mutti (*Terminalia tomentosa*), cedars (*cedrus toona* and *clickrassia tabularis*), Velle Naga (*Cococarpus latifolia*) and Ven Tek (*Lagerstromia microcarpa*)".

"The Nellumbur Forests: The Indigenous forests on Government leased lands around the teak plantations at Nellambur are rich in the following timbers: Irul (*Inga Xylocarp*), Ven Tek (*Lagerstromia microcarpe*), Vellay Naga conocarpus latifolia), Kara Mardah, Pilla Mardah, Pal Mardah (*Terminalra sopp.*)."

"The Chenat Nair Forest: This forest is leased to the Madras Railway Company for a period of 3 years from the 1st of January 1863. As most of the ripe teak and blackwood trees had been cut before this forest came under the conservancy department, these two timbers are now strictly conserved and the Railway company has only permission to fell/mgle timber like Vengay (*pterocarpus marsupium*), kara mardah (*terminalsa tomentosa*), Irul (*Inga xylocarp*), Ven Tek (*Largestroemia microcorpa*).

87-88

D.Brandis, Suggestions regarding Forest Administration in the Madras Presidency, Govt. Press, Madras, 1883.

700. "It has been maintained that forests of Eucalyptus diminish the water supply to springs and streams instead of preserving it. In a vote of the 12th October 1880, printed with G.O. No.1394, dated the 25th October, the Duke of Buckingham and Chandos, the then Governor of Madras expressed a doubt whether blue-gum is the right tree to plant for the maintenance and protection of water sources. His Grace added: "The enquiries I have made since I have been on the hills, lead me to think that the enormous growth of this tree on the hills absorbs the water and tends to dry up, rather than to maintain the supply.

Upon this conservator, having been requested the Government to give his careful consideration to be utility of blue-gum plantations, as regards the preservation of water supply, reported as follows: "We have not sufficient data to say positively whether the rapid growth of these Eucalypts tends to absorb more --- moisture than the indigenous trees, but the theory that this is the case is probably correct."

"In November 1881, the N.A. Roupell, Acting Commissioner of the Nilgiris, in forwarding the conservators inspection report to the Government said: "Whether looking at the water supply, the Eucalyptus is the best tree to plant seems very questionable. The ground beneath it is commonly bare and dry. It has a long tap root and its capacity for absorbing moisture seems so great as to convert ---malarious ground into dry and healthy sites."

109

Beadon Bryant, CSI. Inspector General of forests to the Government of India, Note on Forest Revenue and Expenditure in Madras with some suggestions regarding Forest Administration. Govt. Press, 1913.

Without roads many valuable forests must remain unmarked, and it would be penny-wise and pond - foolish policy to curtail expenditure on roads or schemes for mechanical means of transport which can be shown to be likely to result in increased revenue in the near future. I would advice that as much money as possible be spent on roads and transport schemes so far as these can be shown to pay.

110

29. ... Expenditure of Rs.1,02,951 in 1909-10, on the purchase of land acquired in the Attapadi Valley.

116

Anonymous, Report from the select committee on Forestry; together with the proceedings of the committee, Minutes of Evidence and appendix. London 1885.

I have seen a well-known perennial stream dried up completely upon the slopes of the Nilgherries, undoubtedly from the fact that the timber all round it has been cut for coffee planting.

29

Anonymous, Nilgiri Wildlife Association Centaury 1877-1977. Ooty, 1977.

p7) Imagine then, this plateau, a spider's web of countless streams, converging ultimately to become dignified rivers and falls of great beauty. A patchwork of swamps and marshes, rolling grasslands, with every fold and r--clothed in evergreen woods or sholas, the whole abounding in a wide variety of wildlife both far and feather such was this rare jewel of nature, guarded for so long from the foreign invader by the Malarial forests of the foothills, at the beginning of what is known of--as the 'English Period', why 'English' when ---- and Irish, in the main developed the hills, we are unable to understand.

M. Lesdrenant de lam Tonr, the naturalist, -- by illness had been brought "to Deaths' Door" rapidly recovered his health in the coll climate.

Sultinan asks for money to survey and increase revenue of produce like wheat, barley, peas, opium, millet, garlic, mustard.

Sob Ranjan Misra, Teak Industry in India, Ashish Publishing House, 8/81 Punjabi Bagh, New Delhi 110 026 1986.

Nilgiri; area as on 31.12.1982 and production during 1982

Tea	No. of Estates	Area in ha.	Production in kgs.
Upto 5 ha.	6,518	8,048	N.A.
5 ha. - 50 ha.	115	2,047	1,311
50 ha. - 100 ha.	16	1,193	1,435
100 ha. - 200 ha.	23	3,468	4,681

SW Monsoon Zone in Nilgiri 30%
 NE Monsoon Zone in Nilgiri 40%
 SW & NE Monsoon Zone in Nilgiri 30%

(1989)	ha. Area	tonnes Production
Nilgiris	24,139	43,344
Nilgiris-Wynad	10,094	17,275

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Planting opium: A Fortnightly Journal, Coonoor, Saturday, September 14th 1895. Vol.1, No.1.

p.4)..so far as the Nilgiris are concurred at all events, experience has shown that he (sambhur) has developed an inordinate fondness for damaging young plantations and making himself as objectionable as possible in every way....

...Does the sambhur do all this damage sheer lone of mischief or because he knowing a kind game association protects him in the interest of spot and of some Government officials who come up to the Nilgiris for a few months in the year? If so, it is the duty of the Game Association, who are so anxious to preserve such ---, the pay for the damage done to planters by the animals under their protection.

.... Jericho

② Planting Opium, Oct. 12, 1895, Vol. 1,43.

p6) The wild dog, pack size 6 to 18 too 20.

...Wild dog protects the planting industry in a very efficient manner ... (And) -- The Nilgiri Game Association actually gives remark of Rs 5 for every male and Rs 7 for every female wild dog killed.

Planting Opium, Oct. 26, 1895, Vol.1,44.

p12) The First Days of coffee on the Nilgiris:

....In the early 40s, when forest conservation was not invented, when municipalities and District Boards had not come into existence, and Badaga labour was plentiful at 2 as. per day for men and 1 a. for women and boys. It was in 1840 when public curiosity was somewhat --- by the arrival in Ooty from Mysore of eight bundies loaded with coffee plants, long straggly things, grown up under the shade of planting trees, and bought from the natures for Rs. 10 a thousand to be transported to Hardathoray near Kotagiri -- an estate was being opened under the partnership of M/s. Haszelles, --, and Magrath... simultaneously Mr. M.D. Cokbun of the Madras Civil Service, had commenced on estate at Balahardah on the Kotagiri ghaut and his son was similarly engaged (M.R. George Coc---) at Chalhardah immediately under Bishop and Stowe (then the property of Bishop Spencer) at Kotagiri. Mr. Bannerman of the MLS and Asstt. Apothecary Haldwell were also forming small plantations at Tottapottiam on the Kotagiri Ghaut. Wynad was also -- of as a fine-stricken jungle, and the few plucky individuals who had started planting at Manatoddy (Messers. Richmand, Morris and others) were looked upon as enthusiastic lunatics.

Even these early days manure was deemed indisposable, and not only were large buds of cattle kept on the estates, to the general benefit of the numerous ----, but it was brought from the Badaga villagers in the ---.

In 1841 the plantation at Bonnahattee, commonly known as Hoolocul was commenced, and very shortly afterwards it was seen that the first commenced Totems were within range of frost, and mere unsuitable, and their owners tried their luck in lower localities and the slopes of the glouts began to be taken up and have continued in profitable cultivation upto the present day. Apparently, the experience gained by the early pioneers have been utterly wasted upon the planters of the present day, for plantations have been lately formed in localities that would have been considered much too high in olden times and in soil that must cost a fortune to make productive; the latter defect is not of course incurable, but nothing makes up for unsuitable climate among to too great ---.

With the advent of Mr. James Ouchterlony to Neddiwuttum and his commencement of the three estates, "Lawriston, Suffolk and Sandy Hills," under the superintendence of Mr. Alpin Fowler may be dated the commencement of intelligent planting on the Nilgiris.

3-4

p 239) Category. The name Category is properly "Kotarkeri" or the street of Kotas and it was the chief village of Kotas in the district. Their village was situated in the middle of the station, but in 1910 for sanitary reasons, the government gave these people a large grant of money and land to remove from the station, and the old pictures que but dirty village no longer exists. Category was the first place on the plateau to be inhabited by Europeans, and all the earliest explores to the hills came up through Kotagiris via Kil Category, a Kota village 8 miles west of Category.

5

p241) Auapura Coffee Works Co. Ltd. Started in 1891. Pierce Leslie & Co. Ltd. 300 -400 women employed.

Auda Tode Estate: Mr. H.R. Winterbothem, assigned in India in the year 1861. The land which he selected was an impenetrable jungle; there were no roads worthy of the name; wild animals were numerous and enterprising; and food for master and man was extremely rough and difficult to get; the estate in 650 acres in extent, and the owner was engaged in the growing of coffee until 1903, when, among to the ranges of lead disease, the greater portion of the cultivated land was given up to tea bushes. The latter has been planted upon 130 acres. 2600 ft. MSL 130". 200 labourers.

6

p248) O'Valley.

Henna Wapshare was felling the jungle for cultivating office in the part of the country now known as Balwadies estate, he suddenly came upon a gang of Jain Kurumbers frightened and huddled together. He surrounded them with the canasese coolies who more felling the jungle at that time and took them to his bungalow, shut them up in a godown and fed and clothed them. When captured they were almost perfectly wide. After 3 or 4 days had -- be released them by which time they had realized instructively the nature of the Late Henry Wapshare's object, and this fact, compiled with his kind and generous treatment they -- to flock to his bungalow with gifts of honey and other produce. This was in the early sixties.

202-203,70-71-72,74-75,87-88,109,110,116,29, writing pad.

[11] Such a process could create a wave of extinctions of several plant, animal species

[11-12] Once an area is settled, humans would begin to accumulate over generations experience of how their harvests, their manipulations of the environment impact resource populations. They would be able to perceive resource depletions that follow non-sustainable harvesting pressures, and recoveries when, for some reason, harvesting pressures are reduced. Furthermore, when living in a given locality generation after generation, they might perceive self-interest in moderating harvesting efforts so that harvests are improved in the longer run. This would be particularly so if they largely depend on harvests from a circumscribed area, and are using technologies that are not continually leading to higher and higher levels of harvesting efficiencies. Many small-scale, autonomous hunter gatherer or horticulturalist societies settled in a region where they control well defined territories from which most resources are garnered are likely to fulfil these conditions. Such people may then have the knowledge base, the motivation, and the capability of moderating resource harvests so as to serve long term, group interests in sustainable use and conservation of natural diversity.

[14-15] That is equivalent to less than 1 in 10,000 living species. Moreover this is a very biased sample, with most species coming from subtropical grasslands, several from tropical forests and very, very few from other habitats. Most of the species are also characteristic of the more disturbed, successional habitats. But ever since the process began, humans have strived mightily to mould the landscape and waterscape of the earth in ways geared to promoting populations of this tiny sample of the world's total biodiversity.

[15] Humans have endeavoured, and rather successfully so to acquire their growing biomass needs from intensifying the productivity of this small number of husbanded species.

[15] Such a system of cultivating a plot of land for a few years and leaving it under fallow for a much longer period creates a mosaic of vegetation under different successional stages.

[16] But shifting cultivation systems generate very little surplus of production above and beyond the needs of cultivators themselves. It is therefore a system suitable only for autonomous, small scale societies.

[17] So with time fallows must have become progressively shortened and more land brought under cultivation, calling for other ways of replenishing soil nutrients, as well as controlling crop pests and diseases.

[19] Thus most of the grasslands of India dominated by a small number of grass species such as Heteropogon contortus and a few exotic weeds like Parthenium have been created from much more species rich tropical deciduous forests.

[21] there were created unprecedented concentrations of human hosts which permitted the evolution of new strains of epidemic diseases like smallpox and plague.