

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No.

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CIRCULAR No. 1 FOREST.
GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
Revenue—Forests.

FORT WILLIAM, FEBRUARY 7, 1866.

Teak Plantations, Bombay.

Read the following :—

Extract No. 4911, dated 6th December, 1865, from the Proceedings of the Government of Bombay, in the Revenue Department.

No. 4064, dated 20th November, 1865.

*From—A. ROGERS, Esq., Revenue Commr., Northern Division,
To—Chief Secretary to Government of Bombay, in the Revenue Dept.*

I have now the honour to submit the Report called for in the Resolution No. 3129, dated 22nd July 1865.

2. Nothing has yet been done in the principal Division of the Tanna Collectorate, Mr. Williams, the Deputy Conservator of Forests, stating that his time was fully occupied by the work in connection with the cutting contract, and the demarcation of forests under the Resolution No. 1106, dated 26th March 1864.

3. In the Colaba Sub-Collectorate two plantations have been made. They are both promising. The ground devoted to each is capable of extension, and measures have been taken to add to the number of plants gradually, so that, in the course of a few years, the whole area will be covered with teak trees. The accompanying Report from the Sub-Collector, with

No. 716, dated 23rd September 1865. its accompaniment, contains a detailed account of these plantations. Much credit is due to Mr. Walton for what has been done. The plantation at Rajwadee I took the opportunity of inspecting when at Mahar in May last. It was then in a flourishing condition. Rupees 1,000 were sanctioned by me in July last, in consultation with the Conservator of Forests, for expenditure on this plantation, and instructions were also issued at the same time to select sites in other parts of the Districts for new plantations.

4. In Khandeish the attempts made have not been quite successful, and Mr. Ashburner has ordered further experiments in six different Talookas, No. 1297, dated 7th July 1865. the result of which will be reported in due course. A copy of Mr. Ashburner's letter, together with the remarks of the Conservator of Forests thereon, is submitted for the information of Government.

No. 716, dated 23rd September, 1865.

*From—A. MACDONALD, Esq., Acting Sub-Collector of Colaba,
To—Revenue Commissioner, Northern Division.*

With reference to Government Resolution No. 3129, dated 22nd July last, I have the honour to forward a Report by the Deputy Conservator of Forests, Colaba, on the two teak plantations in this District.

2. The first plantation at Rajwadee, in the Ryghur Talooka, is advantageously situated for watering. At present only about 10 acres have been enclosed, but as it is found that effective supervision can be maintained, so year by year the enclosed ground will be added to. The Deputy Conservator shows the cost up to the 31st August to be Rs. 392 3 5. To this must be added for watering charges 581 2 0

Total cost ... Rs. 973 5 5

3. The second plantation is at Oothukul in the Rajpooree Talooka. Here only about 4 acres have been enclosed, but at present this enclosure is being added to, so that it will contain about 10 acres this season. The Deputy Conservator reports the expense to be Rs. 233-13-5; add to this sum the watering charges, Rs. 499-15-7, and the total cost is Rs. 733-13-0.

4. Both plantations are flourishing, but the cost for watering is large. This will now be decreased, and the plantations will in time be self-supporting. For the Rajwadee plantation, in addition to the 10 acres already enclosed, 4 acres more will be taken, and as much of the 150 as the Deputy Conservator may report to be required; also at Oothukul 7 acres more will be enclosed, and whatever may in future be required.

5. Thus, although 150 acres for the one, and 380 acres for the other, are mentioned as the respective areas of the two plantations, it will be seen that but a very small portion of the land is actually planted; and in future operations only such additions will be made as strict economy in expenditure, limited by a due regard for the object with which the plantations have been formed, will allow.

No. 3239, dated 26th September, 1865.

Memo. by A. ROGERS, Esq., Revenue Commissioner, Northern Division.

The Acting Sub-Collector will be good enough to submit a statement showing the cost of watering these plantations since they were started. When the Revenue Commissioner visited the Rajwadee plantation, he observed that all the water was carried up in pots on bamboos slung over men's shoulders for some distance from the river, and it was suggested, if a Persian wheel, to be worked by bullock-power, were constructed to raise water. On this point the Deputy Conservator should be consulted, and further report made, together with any other suggestions for improving both plantations that may occur.

No. 748, dated 6th October, 1865.

Memo. by A. MACDONALD, Esq., Acting Sub-Collector of Colaba.

In returning the papers marginally noted, the undersigned has the honour to report that the amount entered in his first letter is the total sum expended from the first on watering these plantations.

2. Regarding the method used in irrigating the plantations, a long correspondence lately took place, ending with the Revenue Commissioner's Memorandum No. 2242, dated 18th July 1865, to the address of the Conservator of Forests. The Deputy Conservator is now arranging to put up a Persian wheel at the Rajwadee plantation. He is also about to visit both plantations, and will report, if necessary, on any further measures for improving them.

No. 226, dated 6th September, 1865.

*From—A. SHUTTLEWORTH, Esq., Depy. Conservator of Forests, Colaba,
To—Acting Sub-Collector of Colaba.*

I have the honour to submit an account of the plantations in this Sub-Collectorate from the date of their formation up to the end of August 1865.

2. The plantations are two in number—one in the Ryghur, and the other in the Rajpooree Talooka. I will first report on the former.

3. The Ryghur plantation is in the Soobah Petta, near the village of Rajwadee; it contains 150 acres; is within three miles of the Mamlutdar's Tanna, and half a mile from the main high road between Nagotna and Mahableshwar; is situated on the bank of the tree River, which contains fresh water all the year round; the soil is very good, and the plantation is a Government reserved number, which can be extended from year to year.

4. During the months of May and June 1864, six acres of the 150 were enclosed by a quickset-hedge; the ground was ploughed; rab strewed over it and burnt; and a nursery formed, and the undermentioned seeds sown—

Native Name.	Genera.	Quantity sown.
Saug or Teak ...	Tectona ...	15 Maunds, 3 Pilees.
Seesoo or Blackwood ...	Dalbergia ...	2 Adolees.
Aeen ...	Terminalia ...	4 Maunds.
Keenjul ...	Ditto ...	2 "
Khair ...	Plumiera ...	1 Adolee.
Nana ...	Lagerstroemia ...	6 Adolees.
Khasson ...	Elæocarpus ...	25 Seeds.
Kurrunj... ..	Pongamia ...	15 "
Shemee... ..	Prosopis ...	1 Seer.
Bawa ...	Cassia ...	50 Seeds.
Amb, or Mango ...	Mangifera ...	400 "
Sowa ...	Anethum ...	10 "
Jambool ...	Syzygium ...	400 "
Char ...	Buchanania ...	50 "
Bibla ...	Pterocarpus ...	10 Seers.
Wakeree' ...	Cæsalpinia ...	100 Seeds.
Apta ...	Bauhinia ...	100 "
Mohe ...	Bassia ...	50 "
Heedoo ...	Nauclea ...	3 Adolees.
Amlee, or Tamarind ...	Tamarindus ...	1 Seer.
Bor ...	Zizyphus ...	10 Seeds.
Jamba ..	Juga ...	1 Seer.
Assauna ...	Bridelia ...	3 Adolees.
Oomba ...	Ficus ...	1 Seer.
English seed ...	Unknown ...	1 "

5. The nursery was well watered, and every care and attention paid to it.

6. Teak seeds took from 1 to 1½ months to germinate, and the other seeds from 10 to 15 days.

7. During the month of September 1864, the seedlings were transplanted from the nursery into the 6 acres which had been enclosed and prepared for them.

8. In the month of October 1864, the following plants were brought from the neighbouring forests and placed in the plantation:—Teak 2,500, Bibla 40, Nana 40, Aeen 678, Khair 67, and Heedoo 370.

9. On the 30th April 1865, the average height of the plants in the plantation was 4 feet, and the numbers and species as follows—

1. Teak ...	5,199	13. Char ...	28
2. Blackwood ...	198	14. Bibla ...	140
3. Aeen ...	2,178	15. Wakeree' ...	62
4. Khair ...	97	16. Apta ...	70
5. Nana ...	100	17. Mohe ...	25
6. Khasson ...	5	18. Heedoo ...	975
7. Kurrunj ...	5	19. Tamarind ...	2
8. Shemee ...	10	20. Bor ...	1
9. Bawa ...	31	21. Jamba ...	5
10. Mango ...	290	22. Assauna ...	10
11. Sowa ...	4	23. Oomba ...	50
12. Jambool ...	336	24. English plants, unknown	100

being of 24 different genera, and 9,921 plants in all.

10. The expenses of the above plantation up to 30th April 1865 are as follows:—

	Rs.	A.	P.
Paid for enclosing 6 acres with a quickset-hedge, and keeping it in constant repair ...	92	0	0
" for ploughing the plantation ...	34	1	7
" for rab and manure ...	40	0	0
" for the purchase of agricultural implements ...	6	8	6
" for carriage of seeds to Rajwadee from the several Talookas ...	18	2	0
" Gardeners' pay up to 30th April 1865 ...	111	9	10
Total ...	302	5	11

11. The sum of Rs. 500 was sanctioned for the above plantation, and Rs. 10 was received from a man as compensation for damage done to the plantation by his bullock; thus the Cr. side of the account is Rs. 510 0 0 and the Dr. side is " 302 5 11

leaving a balance of... .. Rs. 207 10 1 on the 30th April 1865.

12. Between the 1st May 1865 and 10th of June 1865, an additional 4 acres were enclosed, making 10 acres in all. Nurseries were prepared, and the following seeds sown:—

Saug or Teak	...	Tectona	...	12 Maunds, 3 Pilees.
Jamba	...	Juga	...	3 Pilees.
Khair	...	Plumiera	...	1 Maund.
Aeen	...	Terminalia	...	3 Pilees.
Heedoo	...	Nauclea	...	3 Adolees.
Phunnus or Jack	...	Artocarpus	...	50 Seeds.

13. Of the above, 801 Saug, 1,000 Jamba, 1,000 Khair, 200 Aeen, and 40 Heedoo, have germinated; the Khair seedlings are over four inches in height, and the remainder under.

14. All the above plants have been transplanted into the 4 acres which were enclosed this official year, and 8,197 teak seedlings were brought from the neighbouring forests and placed in the same plot of ground between 10th and 31st August 1865.

15. The expense incurred on the plantation between 1st May 1865 and 31st August 1865 is as follows:—

Paid for carriage of seed to Rajwadee from different Talookas	Rs.	A.	P.
" for rab and manure	...	5	15 0
" for the purchase of tools	...	39	0 0
" for building a hut for Gardener	...	1	15 6
" for ploughing	...	2	15 0
" for weeding the 10 acres	...	1	12 0
Pay of Gardener for above period	...	8	4 0
	...	30	0 0
Total	...	89	13 6

16. The total size of the plantation on the 1st September 1865 was 10 acres, and it contained the following, in addition to the plants enumerated in paragraph 9:—

Teak	...	9,000	Khair	...	1,000	Heedoo	...	40
Jamba	...	1,000	Aeen	...	200			

The expense incurred from its commencement to 31st August 1865 is Rs. 392-3-5 (exclusive of watering, the cost of which has been charged in the Forest Contingent Bill). The balance on hand on 1st September was Rs. 117-12-7.

17. The plantation in the Rajpooree Talooka is near the village of Oothukul in the Nizampoor Petta: it comprises 380 acres of land, is bounded on two sides by a fine broad Nullah (a continuation of the Gurgaon tributary to the Savitree River), and is situated about 1½ miles from the Mhar and Nagotna highway, and near the junction of the Nizampoor Road. The creek contains sufficient water during the greater part of the year to float timber down to the Savitree River, and is never perfectly dry.

18. The following sorts of seeds were sown during the months of May and June 1864, viz:—

Teak or Saug	...	Genera.
Khair	...	Tectona.
Aeen	...	Plumiera.
Nana	...	Terminalia.
Seesoo	...	Lagerstomia.
Mango	...	Dalbergia.
Phunnus	...	Mangifera.
Bhend	...	Artocarpus.
Kullum	...	Erinocarpus.
	...	Nauclea Orientalis (?)

19. Some of the teak seed germinated in June 1865, as did all the other varieties from 10 to 15 days after sowing: the remainder of the teak seed only made its appearance above ground at the commencement of the present monsoon.

20. Four acres and 2½ goontas of the 380 acres were enclosed in May 1864, but the transplanting did not commence till June 1865.

21. From May 1864 to 30th April 1865, 9,500 Teak seedlings, 300 of Mango, 50 of Phunnus, and 8 of Bhend, were brought from the neighbouring forests and planted in the enclosed 4 acres, and on 30th April 1865 the number of plants stood as follows:—

1. Teak	...	9,586	6. Blackwood	...	100
2. Khair	...	200	7. Mango	...	300
3. Aeen	...	1,000	8. Phunnus	...	50
4. Kullum	...	50	9. Bhend	...	8
5. Nana	...	200			

Thus there were 9 different genera and 11,494 plants.

22. The cost of the plantation up to 30th April 1865, exclusive of watering charges, amounted to Rs. 194-0-9.

23. Between the 1st May and 31st August 1865, a nursery has been formed, and one maund of teak and half a maund of building timber seeds have been sown. Of the former, none have yet germinated; of the latter, a large number have come up, and are about 3 inches in height. Rupees 39-12-8 have been expended in the above work.

24. The total size of the Oothukul plantation on the 1st September 1865 was 4 acres and 2½ goontas, containing 11,494 young plants, also a nursery with about the same number of seedlings; and the cost of this plantation up to that date, exclusive of watering, was Rs. 233-13-5, leaving a balance of Rs. 266-2-7.

25. Thus in the Colaba Sub-Collectorate there are two plantations of 10 acres and 4 acres, 2½ goontas, respectively, and they conjointly contain 32,655 plants and nurseries with about 20,000 seedlings. These have been made at a cost of Rs. 626-0-10, exclusive of watering charges.

No. 1297, dated 7th July, 1865.

From—Collector of Khandeish,

To—Revenue Commissioner, Northern Division.

I have the honour to report the result of my operations in teak planting, in accordance with the Resolution of Government, as per margin. On receipt of the Conservator's instructions, I caused two spots to be selected for the plantation in the Sooltanpoor and Challisgaum Talookas, and seed having been procured from the best teak jungle in the Dang, it was planted, as directed by the Conservator, in the month of April 1864. The seeds, having been covered with straw, were sown and regularly watered till the monsoon, and during the monsoon whenever the rains failed. In the month of November I visited the Challisgaum plantation, and found that only about a dozen seeds had germinated. The Sooltanpoor plantation was reported to have entirely failed, I therefore considered it unnecessary to incur further expenditure, and abandoned the plantation.

The result of the following experiment, which I tried in the monsoon of 1863, may, perhaps, be interesting as a guide for future operations in planting. In the month of June 1863, I planted about a cart-load of teak seed on the Sulling Hill, and in the Valley immediately to the south of it. There was very little rain in 1863, and none of the seeds germinated during that monsoon; but in the month of May 1864, the grass on the hill took fire, and early in June there was a heavy fall of rain, immediately after which the teak seed began to germinate, but there was no further rain for nearly two months, and most of the young trees perished for want of moisture. I employed bhisteas for some time to water them, but finding it impossible to water the whole of them, I transplanted what remained, about 100 young trees, on the banks of the river at Dhoolia. These are now flourishing, some of them being four feet high.

I observed that, where the grass had been thick, and the ground had been thoroughly scorched by the fire, the seeds had germinated almost without failure. In the valley below, where the fire did not extend, I could not find more than 15 or 20 young trees.

The inferences I draw from this experiment, are—first, that jungle fires, so far from injuring the Forests, are beneficial to them if not absolutely necessary; and secondly, that neither the abundant supply of water, nor the straw treatment, nor the soaking in hot water, prescribed by the Rules of the Conservator of Forests, are objectionable.

That jungle fires do not destroy the young trees, may be proved by observing the trees growing in a dense Baroo Jungle. After this has been burnt, the young teak trees, though only a few inches high, will be found scorched, but uninjured, and putting out fresh bud even before the monsoon had fallen.

Acting on the experience gained by this experiment, I have this year planted large quantities of teak seed in six Talookas of Khandeish, and I hope to be able to report favourably of the results early next monsoon.

No. 2149, dated 12th July, 1865.

Memo. by A. ROGERS, Esq., Revenue Commissioner, Northern Division.

Forwarded to the Conservator of Forests for any remarks he may wish to offer.

No. 521, dated 13th July, 1865.

Memorandum by the Conservator of Forests.

The rules for the sowing of teak seed were adopted from those of Mr. Conolly, Collector of Malabar. After repeated experiments and failures, and to show that they are free from objections, they have been found to answer admirably in the Concan, where there are now 24,000 seedlings from seed which germinated the same season in which it was sown.

2. There is no doubt that the great heat of the Concan, and excessive moisture of that District, tended to bring about this favourable and speedy result, and that the absence of these concurrent conditions in Khandeish was the cause of the supposed failures alluded to by the Collector. It should be borne in mind, however, that it would often be an erroneous conclusion, because a seed did not germinate at the expected time that its vegetating powers were lost.

3. Under the most favourable circumstances, the seed of the Almond and Peach require one year to germinate in Europe, while it is very probable that they would germinate in the tropics in a month.

4. These seeds resemble the teak in being hard and bony, and it is proved by Mr. Ashburner's own experience, that the seed sown in 1863 in Khandeish takes a longer time to germinate in that climate, and that the seedlings made their appearance after one year.

5. From Mr. Conolly's experiments, as well as from the Conservator's own observations, it appears that the firing of the jungles can have no effect whatever on the germination of teak seed.

6. The burning of the ground before sowing supplies alkalies, and probably destroys insects and worms.

7. Some allowance must always be made for the seed which is sometimes bad.

RESOLUTION.—The result of the experiments made in the Colaba Sub-Collectorate is very satisfactory, and Government hope that similar efforts will be made in other suitable localities.

ORDER.—Ordered, that copies of these proceedings be forwarded, for information, to the various Local Governments and Administrations, excepting Bombay.

Wickham Lieut.-Col., R. A.,
Secy. to the Govt. of India.

To
The Secretary to the Govt. of Madras.
Revenue Department.

To

PUBLIC WORKS DEPARTMENT.
REVENUE-FORESTS.

GOVERNMENT OF INDIA.

CIRCULAR No. 1 FOREST.

Dated February 7, 1866.

Received 21st.

Teak Plantations, Bombay.

With enclosures

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Ordered that two of
the copies of the foregoing
O. be forwarded to the Conservator of
Forests and Secy. of Revenue, respectively
and the third kept in store.

30 March 1866.