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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	1075	Press
B.P. No.		Mis.

Dated 25th August 1874 196 .

Not to be folded or roughly handled

Proceedings of the Madras Government, Revenue Department,
25th August 1874.

No. 231. Read the following letter from ARTHUR HOWELL, Esq., Deputy-Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce, (Forests,) to the Governments of Bengal, North-Western Provinces, and the Punjab; the Chief Commissioner of Oudh, British Burmah, Mysore and Coorg, Ajmere, Assam; and Resident at Hyderabad, dated Calcutta, 12th August 1874, No. 25/906—914:—

I am directed to transmit, for communication to all forest officers, —— copies of a Memorandum by the Inspector-General of Forests on the preliminary working plan of the Ahiri forests in the Central Provinces.

No. 915.

Copy, with ten copies of the Memorandum, forwarded to the Government of Madras for information.

(Signed) ARTHUR HOWELL,
Deputy-Secretary to the Government of India.

No. 232. Order thereon, 25th August 1874, No. 1,075.

Forests, No. 15.

Communicated to the Board of Revenue, with the request that a copy of the Memorandum may be sent to the Collector of Vizagapatam.

2. Copy to the Inspector of Forests.

(True Extract.)

(Signed) C. G. MASTER,
Acting Secretary to Government.

To the Board of Revenue.
" the Inspector of Forests.

Exd. F. R. Bantleman.

Govt. of India.

REVENUE.

THE BOARD OF REVENUE

&c. &c. &c.

Dated August 25th.

Rec'd.

Encl.

G.O., 25th August 1874, No. 1,075.

AUGUST.

Nos. 231-232.

Memorandum by D. BRANDIS, Esq., *Inspector General of Forests, on the working of the Ahiri Forests, dated Calcutta, the 6th June* 1874.

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NOT having visited Ahiri myself, I hesitate to submit proposals on this subject. But the requirements of the Wardha Valley Railway and the increased demand which is sure to follow the opening of that line require early consideration of the measures which must precede the establishment of a regular plan of operations.

2. *Area and growing stock.*—I understand that the boundaries are demarcated, that there are no forest rights of other persons, that a rough topographical survey has been made, and that the only marketable timber at present is teak and blackwood, which are mixed with bamboo, *Terminalia*, *Nauclea*, *Schleichera*, and other trees, but that there is hope of eventually utilizing some of the other kinds. Ahiri consists of two distinct forest tracts, aggregating 20,775 acres, or 32½ square miles, which have been divided into 10 demarcated blocks, reported in 1871 to have the following growing stock of sound teak and blackwood, as determined by Captain Fox and Mr. Hicks partly by actual counting, partly by estimate :—

I.—Tulwara or Bemaram tract.

Number of block.	Area in acres.	Sound first class trees above 6 feet girth.		Sound trees below 6 feet girth.		Total of sound trees.	
		Teak.	Sheshum.	Teak.	Sheshum.	Teak.	Sheshum.
1	[illegible]	2,626	69	15,479	5,005	18,105	5,074
2	[illegible]	3,014	254	18,806	4,806	21,820	5,060
3	8,178	2,181	274	22,265	8,376	24,446	8,648
4	3,298	1,850	99	19,273	6,380	21,123	6,479
5	1,937	1,942	55	11,217	4,301	13,159	4,356
Total ...	12,296	11,613	749	87,040	28,868	98,653	29,617

II.—Mirkulloo tract.

Number of block.	Area in acres.	Sound first class trees above 6 feet girth.		Sound trees below 6 feet girth.		Total of sound trees.	
		Teak.	Sheshum.	Teak.	Sheshum.	Teak.	Sheshum.
1	[illegible]	210	58	2,191	601	2,401	[illegible]
2	1,2[illegible]	2,226	607	12,976	5,014	15,202	5,621
3	3,707	5,880	946	34,533	9,464	41,413	10,410
4	2,072	3,917	472	16,330	4,164	20,247	4,636
5	1,139	2,499	200	8,140	2,157	10,639	2,357
Total ...	8,479	15,732	2,283	74,170	21,400	89,902	23,683

It will have to be decided whether these two tracts should for the present, be regarded as forming one working circle, or whether each should be dealt with as a separate working circle. The area, for which each working-plan is made, is termed a working circle; each working circle is divided into blocks mainly (on hill land) according to the configuration of the ground; and blocks are subdivided into compartments with reference to soil and character of the forest.

3. Besides sound teak and sissu it was reported in 1871 that the two forest tracts contained the following stock of unsound teak:—

	Trees.
Tulwara and Bemaram	96,554
Mirkulloo	19,303
Total ...	115,857

A survey made by Captain Jarrett in 1869 gave a much larger growing stock. It is not impossible that a complete enumeration made on an improved method may give results different from the two previous surveys.

4. *Regular working-plan not possible at present.*—Now, it is evident that under all circumstances the first step must be to prepare a detailed descriptive account of the different portions of the forest. At the time of the valuation survey the 10 blocks mentioned were sub-divided into compartments to facilitate enumeration, and the first question is whether the existing sub-division of blocks and compartments is sufficiently in accordance with the configuration of the ground to be employed in drawing up the descriptive account required.

Probably this will not be found to be the case, and a complete re-arrangement of blocks and compartments will be necessary before a regular working-plan can be drawn up. But this must be deferred until the work can be taken up by an officer experienced in valuation surveys and the preparation of working-plans, acting in concert with the local officers and under the control of the Conservator of Forests. Moreover, before we can attempt the preparation of a regular working-plan for Ahiri, we must have a longer experience than we possess at present of the working of the forest, and we ought to know more regarding the requirements of the market in respect of teak and other timber, the cost of timber operations, and the surplus likely to be yielded by them. Our present experience in working the forest is too short to venture upon anything like a regular working-plan.

5. *Preliminary report.*—Meanwhile, however, as a preparatory work, a preliminary descriptive account of the forest is required, and this may be drawn up by the divisional officer or by another officer who may be selected by the Conservator, but who should do the work under the general control of the divisional officer.

The main object of this descriptive account will be to furnish a record of the present state of the forest, and to assist the local and directing officers in the examination of the forest and in determining certain fundamental points which must be ascertained before a regular plan of operations can be drawn up.

In order to attain this object, I make the following proposals:—

1*st*.—A preliminary descriptive report of the forest should be drawn up, consisting of a general and a special part, and a third part containing proposals to regulate cuttings and the work of improvement during the next five years.

2*nd*.—Annual additions should be made to the preliminary report.

3*rd*.—Systematic enquiries should be set on foot to ascertain the fundamental data required for the preparation of a regular working-plan.

6. The *general part* of the report should treat of the following subjects:—

I.—Climate, as far as known; mean monthly temperature; extremes of temperature; rainfall, dew, prevailing winds, and direction of storms; damage done by storms to the forest.

II.—General configuration of the ground; underlying rock; surface soil; drainage.

III.—Vegetation; principal kinds of trees and bamboos; flowering of bamboos, of single stems annually (*Dendrocalamus strictus*,

Bambusa vulgaris), of whole masses periodically (other kinds) time of last flowering and seeding of the bamboo.

IV.—Average dates of flowering, seeding, shedding of leaves, and the breaking out of young leaves of teak and blackwood.

V.—Forest fires—are they regular, and in what month do they occur? What is their effect upon seedlings and large trees of teak and blackwood, and upon vegetation generally in the forest? Have fires been kept out from any portions, and what has been the effect upon the character of the forest generally, and upon teak and blackwood seedlings in particular?

VI.—Other sources of injury: Cattle—how far has grazing been stopped, and since when? Game, insects, creepers, epiphytic ficus, parasites.

7. In the *special part* it is intended to give a description of each compartment or sub-division of the forest. For this purpose the existing demarcation of blocks should be utilized as far as possible. On the map the blocks may, if necessary, be sub-divided into compartments, according to the natural features of the country, though these sub-divisions may not yet have been marked off on the ground, provided, however, that the proposed sub-division lines can fairly be traced in the forest. What is wanted is a detailed statement of the present state of each sub-division with reference to the following points:—

I.—General remarks regarding boundaries, configuration of the ground, aspect and steepness of slope, and drainage.

II.—Soil and underlying rock.

III.—Wells or other water-supply, roads, outlets for the timber.

IV.—Previous working of the forest; stumps per acre or per 100 acres.

V.—Growing stock per 100 acres of teak and blackwood of the different classes. The data of the previous valuation surveys should be utilized, and any apparent discrepancies from the actual state of things should be noticed. At this stage of the proceedings it is obviously not practicable to determine the total growing stock in each compartment or sub-division, as their limits are not defined, and as the areas cannot therefore be ascertained; but it is important to know the proportion of the different classes and the average growing stock per acre or per 100 acres. A fresh enumeration of the entire growing stock is not required for this purpose, but it may be necessary to check the data of the former enumerations by running linear valuation surveys through the sub-divisions, and by counting the trees of different classes on a number of sample plots of a few acres each. Lines and sample plots must be carefully selected so as to represent the average character of the forest, and they must invariably be entered on a copy of the map.

VI.—Proportion of unsound to sound teak and blackwood trees of the larger classes.

VII.—Bamboos (which kinds) and trees of other kinds, their proportion to teak and blackwood; proportion of the different kinds and sizes. Abundance or otherwise of seedlings of other kinds.

VIII.—Creepers and epiphytic ficus, shrubs, and herbaceous growth of grasses, acanthaceæ, and other large herbs.

IX.—Teak and blackwood seedlings (including shoots from seedling stumps cut down by fires), whether numerous or scanty, with description of the localities where seedlings are abundant, and notes as to whether seedlings have come up where clearings or cuttings had been made, and under what circumstances.

Map.—The descriptive account should be illustrated by a map based upon the data furnished by the topographical survey already made of the forest. If it should be found practicable to classify the sub-divisions according to the character of the forest, each of these classes may be shown by a different tint on the map. The following will, I suppose, be some of the principal classes of forest:—

I.—Forest mainly consisting of *Nauclea*, *Terminalia*, and other kinds, mixed with teak and blackwood, or (another class) without it.

II.—Forest mainly consisting of bamboo mixed with teak and blackwood.

III.—Forest in which teak and blackwood prevail.

9. *Proposals for working.*—The preliminary proposals to regulate the working of the forest will form the third chapter of the preliminary report. These proposals will relate to A., timber operations; B., regeneration and improvement of the forest, sowing, planting, protection against fire, cutting of creepers, cutting out or girdling of other trees to assist the growth of teak; C., roads, wells, and other works to facilitate the working of the forest. As regards A., timber operations, it has already been decided to commence cuttings in blocks IV and III of the Bemaram tract, and at present to limit the cuttings to 2,000 unsound trees, required to provide for part of the sleepers for the Wardha Railway, the balance being obtained from dead wood and from private forests. These trees the Conservator proposes to cut by selection, amounting to a thinning out of the unsound trees, the mass of teak and blackwood trees remaining standing.

The following figures are taken from the valuation surveys of these tracts of 1871:—

	Block III.	Block IV.	Total.
Area in acres	3,178	3,298	6,476
Sound teak above 6′ girth	2,181	1,850	4,031
Ditto below 6′ girth	22,265	19,273	41,538
Total sound teak ...	24,446	21,123	45,569
Unsound teak, all classes	22,114	21,931	44,045
Sound sissoo, ditto	8,648	6,479	15,127
Total unsound and sound sissoo ...	55,208	49,533	1,04,741
Per acre	17	15	16

As explained above, these figures must be accepted with considerable reservation. If they are correct, then the forest on these blocks consists of a preponderating proportion of other trees and bamboos, unless it is very incompletely stocked. Under these circumstances, clearing and planting with teak and blackwood would be out of the question at present. Moreover the practicability of planting in Ahiri on a large scale is doubtful. Under these circumstances, a slight thinning, like that proposed by the Conservator, of 2,000 trees on 6,478 acres, may be a good plan to commence with; it will not materially alter the character of the forest, and may yet in places give sufficient light for teak seedlings to spring up. I would, however, suggest to take the whole of the 2,000 trees from one block only and to watch the result. An attempt may also be made to girdle other (heartwood) trees in the same locality with the thinnings, where it seems desirable to give more light over head, and by way of experiment limited areas may be completely cleared of teak and other trees. From the young growth of seedlings, which will doubtless spring up on the clearings, the less valuable kinds should be thinned out. It is possible that this may be found the best plan for regenerating the forest.

10. In a similar manner, the plan for meeting the probable requirements of the next five years should be discussed. For some time to come the plan of gradually thinning out all unsound trees and those which are likely to deteriorate will probably be the best, and the following points should be kept in view in regulating these operations:—

1*st.*—All operations of felling, lopping, logging, dragging, and carting in one sub-division or compartment of the block must be completed before work is commenced in the next compartment.

2*d.*—After the work is completed, the compartment must be closed, cattle excluded, and, if possible, fires must be kept out.

3*rd.*—The order of compartments to be taken up for thinning must be so arranged as to guard against dragging or carting through compartments that have been closed. When clearings or heavier thinnings are contemplated, the prevailing direction of storms must also be taken into account in regulating the order of cuttings.

It should be considered whether any compartments require the thinning out of unsound timber more than others; this also will influence the order of cuttings.

11. *Limitation of annual cuttings.*—This may be done in the following two ways: A, by determining the normal annual yield, and B, by dividing each working circle into a number of compartments of nearly equal productive power, and cutting one compartment annually. Based upon the following data of the valuation survey of 1871, Captain Dovey estimated the normal annual yield (of teak) at 900 trees, or 22,500 cubic feet (paragraph 7 of his report of 27th June 1871):—

	Trees.
Sound teak above 6′ girth	27,345
,, ,, 4′6″—6′	41,305
,, ,, 18″—4′6″	63,368
,, below 18″	56,527
	188,545

From Captain Jarrett's counting of rings he concluded that 30 years was the time required for a second class tree to attain first class size (about 10 rings per inch between the girths of 4′6″ and 6′); and as the survey showed the number of the smaller classes to be more than sufficient, he was justified by the data quoted to assume $\frac{27,000}{30}$=900 trees (which he puts down at 25 only) as the normal annual yield. This, however, takes no account of the unsound teak, which, amounting as it does to more than one-half of the sound trees, would, provided the data quoted are correct, justify 1,[illegible] trees as the annual yield, and from all we know regarding Ahiri, I feel assured that this may safely be taken as the limit for the next five years.

The other plan would be to divide the forest into a number of compartments of equal productive power, say 30 in the present case, and then annually cut all first class trees in one compartment. This would, if the rate of growth is as assumed above, be a perfectly safe plan, and might be made safer still by having 40 or 50 compartments in the place of 30. This plan, however, presupposes a more intimate knowledge of the forest than we at present possess, and it is less elastic, for it adapts itself much less readily to the varying circumstances of the case. If we limit our annual cuttings by a certain quantity, number of trees or of cubic feet, we are at liberty to arrange them as the progress of timber operations and our gradually increasing knowledge of the forest and particularly of the natural growth of seedlings, may indicate; whereas, if we limit them by area, we are compelled from the commencement to adhere to a fixed order and mode of [illegible] which subsequent experience may show to have been based upon erroneous data. For these reasons I think that until a regular working-plan has been framed for the Ahiri forest, the annual cuttings will more conveniently be limited by quantity than by area.

12. The extraction of timber will, however, for some time to come be of less importance than the study of the method by which the regeneration of the forest must be effected. Everything that is done in Ahiri at present must be directed to this point until we know how the reproduction of teak and blackwood is to be accomplished, a regular working-plan is out of the question. Work for work to obtain this object should be made under B, and there will be [illegible] and (C) for [illegible] roads, resting-[illegible], and other work of a similar nature.

[illegible] come to the additions to be made annually to the preliminary report. They should be entered at a fixed season of the year; the close of the working season may be a suitable time. Additional information and correction of statements made upon insufficient data in the original report may be entered on half margin. Besides these, the *general part* will contain, first (under I), an abstract of the meteorological observations made during the year. If no temperature, humidity, and rainfall observations can be made, the number of days with rain and dew and the direction of the wind should at least be noted, as well as thunderstorms and other storms. It is, however, most desirable that thermometer and rain-gauge should be observed for a series of years before an attempt is made to prepare the regular working-plan. The observations should be made under instructions from the Meteorological

reporter. *Second* (under IV), an abstract of the observations of periodical phænomena of vegetation; *third* (under V), a detailed account of the forest fires during the year, the day when they commenced, their spread, and the damage done by them; and *fourth* (under VI), an account of other damage.

The *special part* will contain under each block or sub-division an account of the changes that have taken place by cutting or otherwise during the year; these entries will, however, be short only, for, as explained above, the special part will necessarily be incomplete in the preliminary report for want of a rational arrangement of blocks and compartments, and one year is too short a time to note any change in the vegetation. I may mention here, incidentally, that in the regular working-plan, such as I believe will be adopted in many classes of Indian forests, the special part will be of great importance; no annual additions, however, will be made, but the special part will be drawn up afresh at each decennial revision. It will consist of three divisions, *viz.*, a descriptive account of the compartment, a statement of the work done in it during the preceding decennium, and proposals for the work to be done during the ensuing ten years; these proposals being in accordance with the provisions of the general part. The preliminary report and its annual entries here discussed are, of course, only of a transitory character.

The annual additions to the *third chapter*, (proposals for working) should give an abstract of the work done during the year, explaining any deviations from the original proposals. Here should also be entered such modified proposals for the remaining years as circumstances and the better knowledge of the forest may seem to require. The regular working-plan will provide for the entry in tabular forms (control book) of the work done under the different heads, as well as the annual yield of each compartment, its income and expenditure.

14. *Preparatory work for the regular working-plan.*—The last subject which remains to be noted relates to the work which must precede the preparation of a regular working-plan.

Foremost stands the division of the forest into blocks and compartments, selected and defined according to rational principles. Further suggestions on this point cannot, however, be made without a personal knowledge of the forest. In connection with the formation of blocks and compartments, a complete system of roads should be considered.

The *second* point is a new topographical survey, or the completion of the old survey, if sufficiently accurate.

Third, a fresh valuation survey. Before this, however, can be commenced data must be collected to determine the cubic contents of trees of the different classes. In forests where every piece of wood is valuable, it is sufficient to determine a co-efficient or reducing factor for each class, which, multiplied by sectional area and height of the tree, gives actual cubic contents. In most Indian teak forests, however, the stem only and a small portion of the limbs can be utilized; and the question of the contents of the different classes as regards useful timber is further complicated by the fact that a large proportion of trees is hollow. Again, the proportion of useful and useless timber varies according to the scantling demanded and saleable. It is evident, therefore, that two things will have to be determined; first, the reducing factor, which, multiplied with the sectional area at 5 or 6 feet from ground (above the thick and often irregular base) and length of stem to where it divides into branches, gives the actual cubic contents; and, secondly, the proportion of actual cubic contents to saleable timber. The valuation supplies us with the actual cubic contents, from which the proportion of saleable timber can always be calculated by means of an empirical factor, which, as explained before, will vary from time to time according to circumstances. Thus, what has to be ascertained is the co-efficient or reducing factor, to find actual cubic contents, and the empirical factor to find the proportion of saleable timber. The timber operations during the next five years will furnish the needful data for this purpose.

Fourth, rate of growth. The timber operations will also afford an opportunity for determining the age of the trees felled, and for calculating the rate of growth and the average annual increase of timber per tree (under the former conditions of the forest). The examination of sections of teak trees of known age in Burma (to 12 years), in Nellumbor (to 25 years), and at the Botanic Gardens, Calcutta (trees blown down by the cyclone about 70 years old), has shown that as a rule the concentric rings correspond to the annual growth

of the tree. The concentric rings, therefore, may for the present, until disqualified by further researches, be accepted as a guide for determining the rate of growth. In addition, however, periodical measurements of standing trees of different sizes would be useful. When the regular working-plan comes to be prepared, it will probably be necessary to determine the average age of the present different girth classes, and for this purpose the following extract from an instruction which I drew up on this subject in Burma in 1855 may be found useful:—

17. Wherever practicable, concentric rings should be counted on stumps of felled trees, and the locality as well as the circumstances under which the tree had grown up should be noted. The butt end of felled trees will answer the same purpose, if there is no doubt regarding the locality where the tree had grown.

18. The rings should be counted along two or three radii, so selected that their arithmetical mean as nearly as possible represents the mean radius of the tree; and they should be noted as follows:—

1. From the centre to 2″·3 correspond. to a girth of 18 inches.
2. Do. do. 5″·7, do. do. 3 feet.
3. Do. do. 8″·6, do. do. 4 feet 6 inches.
4. Do. do. 11″·5, do. do. 6 feet.

It will be seen that these figures give the age of a tree at 1, 2, 3, 4 cubits in girth without the bark at the height of the stump, which in the case of a (regularly shaped) teak tree may be considered as about equal to the girth with the bark at 6′ from the ground.

It is convenient to have a small foot-rule 12″ long with the different points noted above marked on it.

19. The results should be noted in a separate register as follows:—

Register exhibiting the rate of growth of teak.

Current No.	Forest tract.	Age of tree at 18″ girth.	Age of tree at 3′ girth.	Age of tree at 4′6″ girth.	Age of tree at 6′ girth.	Remarks.
1.	Nowlay	15	35	60	90	Here should be specified locality, soil, and other circumstances under which the tree had grown up.
		20	40	62	100	
2.	Average etc.	17½ etc.	37 etc.	61	95	

Great variety in the rate of growth will be found in different parts of the same forest district or forest tract. Trees grown on steep slopes, for instance on the crest of narrow ridges, will show a much slower growth than trees grown on undulating or level ground. Again, the nature of the surface and sub-soil, as well as the vicinity of bamboo and other trees, will influence the rate of growth. These are well-established facts which require no further notice. As a rule, therefore, no useful object will be gained by examining in the course of the researches trees of exceptionally slow or rapid growth, and as much as practicable specimens of average growth should be selected.

Fifth.—Experience must be collected concerning the cultivation of teak in Pegu, and for this purpose experimental plantations should at once be established. The main difficulty in this respect will probably be the supply of sufficient labor at the right time of the year; and a long series of years must elapse before any working-plan can be based upon the regeneration of the forest by artificial means. But a beginning should be made, and the only useful information can be obtained by establishing experimental plantations where teak is grown under different conditions, pure and mixed with bamboos or other trees.

Sixth.—Data should be collected regarding the previous working of the forest and the number of trees felled in it: for it is important to form an idea of the previous state of the forest and of the effect which former cuttings have had upon its condition, and particularly upon the growth of young trees.

Our aim in this, as in all similar cases is, to improve the condition of the forest and to make it more productive than it has hitherto been. This task can only be accomplished if our operations are guided by a knowledge as complete as possible of the natural conditions under which the forest has grown up and the action of man which has interfered with its development.

Re. 2879/74

1874.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE AND COMMERCE.

Memorandum by D. BRANDIS, Esq., *Inspector General of Forests, on the working of the Ahiri Forests, dated 6th June* 1874.

No. 705-914

FROM

ARTHUR HOWELL, Esq.,

Deputy Secretary to the Government of India,

To The Govts of Bengal, N.W.Provs & the Punjab, the C.C. of Assam, B. Burma, Mysore, Coorg, Ajmere, Andaman and Resident at Hyderabad

Dept. of Revenue, Agriculture and Commerce.

Forests.

Calcutta, the 12th August 1874.

SIR,

I AM directed to transmit, for communication to all Forest Officers, copies of a memorandum by the Inspector General of Forests on the preliminary working plan of the Ahiri Forests in the Central Provinces.

I have the honour to be,

SIR,

Your most obedient servant,

A. P. HOWELL,

Deputy Secretary to the Government of India.

No. 915

Copy, with 10 copies of the memorandum, forwarded to the Government of Madras for information.

Deputy Secretary to the Government of India.

No 2879.

931-2339

Revenue, 1874. Despatch

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE, AGRICULTURE AND COMMERCE.

FORESTS.

To

No. 25 / 905-914

Enc. 10.

Dated [illegible] 1st [illegible] 1874.

Rec'd. — 24 —

No 1075 [illegible] the
Communication [illegible] the
Board [illegible] with the request
that [illegible] copy of
the [illegible] memorandum
may be sent to the
Collector of Nimar & Betul

25th Aug. 1874

SUBJECT.

TRANSMITTING for communication to all Forest Officers, a memorandum by the Inspector General of Forests on the preliminary working plan of the Melghat Forests in the Central Provinces.

R 12-8-74
27-8-74

O. S. G. P.—No. 1116, R., A. & C.—13-8-74.—30.

To 14 D. of Revenue 4 Copies of Memo
2 Inspector of Forests — 1 " of Memo
Aug 26/74