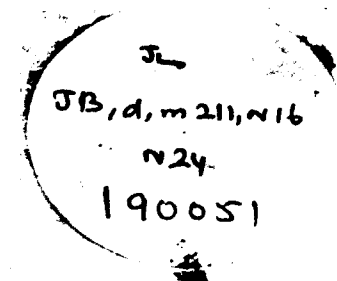


Madras Forest College Magazine

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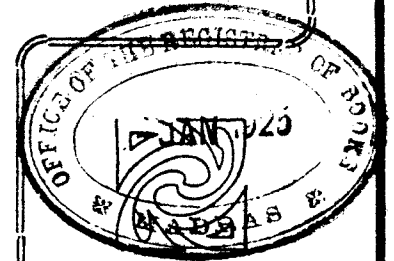


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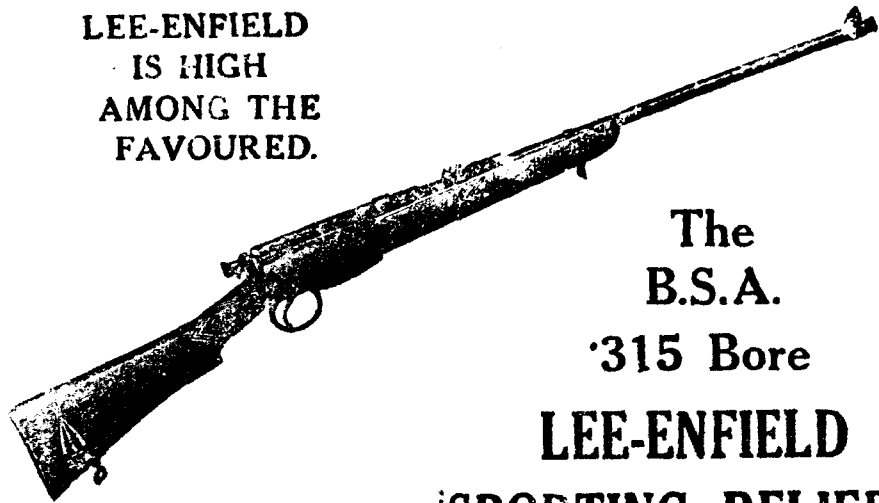
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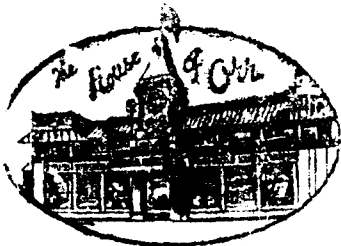
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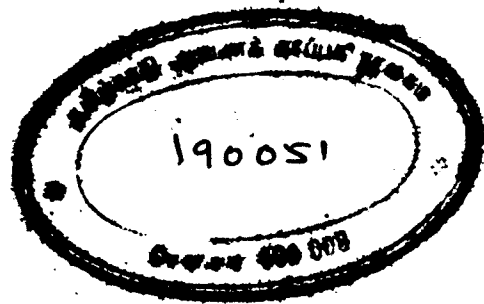
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DECEMBER, 1924.

[No. 2.]

*Extract from Lectures on
Logging Engineering,
delivered before the Students of the Madras Forest College,
by, J. Kenneth Pearce, B. S. F., Logging Engineer, Madras.*

Introduction.

It seems advisable in the beginning, to give you some idea of what this newest branch of the Engineering profession which we call Logging Engineering really means. I presume few of you had ever even heard of the term until 1923 when it was my privilege, and I might add, has been my pleasure, to initiate Logging Engineering practices in Southern India.

As a basis for this introductory discussion let us determine what the broadest sense of the term, engineering, is.

It has been defined as the science and art of directing the sources of power in nature to the use and convenience of man.

However, from an economic and more practical view point, I would define engineering as the science of expending a rupee so as to bring the greatest returns—that is, making a rupee earn the most interest.

Logging Engineering then, makes the logging rupee or, in a broader sense the forest rupee bring the greatest returns. My subsequent remarks will I hope, make this clear to you.

An appreciation of what Logging Engineering means makes it also necessary to establish an historical background.

When the pioneers first settled on the Pacific Coast of the United States of America, the forest extended right down to the lakes and rivers. This timber was so easily accessible that, even with the scarcity of labour, what we call "hand logging" fulfilled the requirements of the pioneer logger.

Only a few simple tools were required—axes and saws to fell the trees, and peavy, or earhook to roll them into the waters edge where they could easily be floated to the mill.

When the narrow belt of timber which could be logged by hand was cut over, it became necessary to reach farther back from the waters edge and animal logging was introduced to haul the logs. Bulls or oxen merely dragged the log along the ground. Then skid roads were introduced which reduced friction and increased the length of haul.

As increasing outturn for lumber and logs demanded greater speed, horses were introduced, less powerful, but faster. As more forest was cut over, the distance logs had to be transported increased.

As animals could not go faster, or do any more work, to get the same output over increased distances the donkey engine was introduced. This was a steam engine driving a drum on which was wound a cable or rope, which hauled in the log by winding up the winch. The radius which could be reached was lengthened, the output increased, and the timber line pushed farther back.

The dawn of this century found the easily accessible timber of the plains and low lying foothills logged off. Operations had now to be conducted in the mountains, at a long distance from tide water where the mills and consuming centres were located.

This necessitated road, or, railroad transport.

The mountains were, as is the habit of mountains, rough and broken in topography and steep in slope. But the forests were there, the demand for lumber was increasing and topographical difficulties had to be overcome by inventing new methods of logging. Skidders, high leads, and skylines to overcome topographical difficulties, powered by steam, gas and electricity made the logging game highly technical.

Costly mistakes in laying out road or other transport systems, taught the logging operator the necessity of planning out his operations far ahead of actual logging so that mistakes might be anticipated and avoided and the whole operation more efficiently arranged.

Many companies had Civil Engineers to lay out their roads but it was found that their lack of knowledge of forestry was a handicap. The most efficient harvesting of a forest crop naturally requires a knowledge of trees, their characteristics, habit, their state of health, maturity etc. The perpetuity of the forest crop must be before in mind when planning its harvest, necessitating a knowledge of silviculture and forest management.

Thus we see how the demand arose for men with a knowledge of training in forestry, engineering and technical logging.

The Logging Engineer filled the bill.

The profession of Logging Engineer was definitely established in 1912 when the Pacific Logging Congress, which is the association of Logging operators, passed the following resolution :—

“The Congress pledges the hearty support, and best efforts to the creation of the profession of Logging Engineering as a distinct branch of mechanical science; and its co-operation in the endeavour of the different Universities to create a department of Logging Engineering. We believe the timbered states and provinces of the West should make liberal appropriation for the adequate equipment and proper maintenance of Logging Engineering courses in their Universities, and for the securing of the highest type of educators for furthering the work”.

Briefly the training of a logging engineer to-day includes:—

- (1) Forestry in all its phases;
- (2) The basic principles of physical science applied at

logging which includes something of mechanical, civil, sanitary, steam, electrical and hydraulic engineering.

- (3) All technical logging methods and systems, and
- (4) Costing, i.e., cost accounts.

This training is necessary in order that the Logging Engineer may

1. Conduct forest reconnaissance,
2. Make topographic maps and timber enumerations or cruise as we call it,
3. Determine the logging method best suited to the country.
4. Make working plans,
5. Survey roads and lay out the operation,
6. Determine water supply, power transmission, etc. and
7. Provide for the sustained yield of the forest acting as the *liaison* officer between the Exploitation on the one hand and the Regeneration on the other.

The actual felling, yarding and transportation of logs he leaves to others while he goes on planning ahead for most efficient operation to get the greatest returns from the forest capital as well as the money capital invested, thus fulfilling my definition of engineering.

There have been principles and methods developed in Logging Engineering which are useful in ordinary forest work as well as exploitation. Instructions in some of these will be the object of my lectures.

Extract from a Lecture on
"Hydraulics Simplified"

*delivered before the Students of the Madras Forest College,
 by, J. Kenneth Pearce, B. S. F., Logging Engineer.*

It may at some time be useful to you to be able to determine
 (1) the quantity of water which you can obtain from a pipe of given
 size, working under certain conditions of head or (2) to ascertain the
 size of pipe necessary to supply the amount of water you require.

The usual treatise or text book on Hydraulics is too technical
 and too complicated for ready practical application, and is not ordinarily
 available. I have prepared some reduced formulæ which give sufficient-
 ly accurate results for practical purposes, and are moreover based on
 correct Hydraulic principles, the theory of which I have explained.

The quantity of water (q) in cubic feet per second obtainable
 from a pipe is equal to the area of the pipe (a) in square feet, or deci-
 mals of a square foot, multiplied by the velocity of flow of the water (v)
 in feet per second. In algebraic form,

$$q = av.$$

We can measure "a" directly but "v" must be calculated from
 the formula.

$$v = \sqrt{\frac{2gh}{1 + M + f\left(\frac{l}{d}\right)}}$$

in which v = velocity in feet per second,

g = force of gravity, averages 32.16,

h = head in feet, ie., vertical distance or,

difference in elevation between the entry end of the pipe and
 the discharge end ;

m = entry head factor.

[0.5 for ordinary square entry (not tapered). May be disregard-
 ed in long pipes.]

f = friction factor, dependent on diameter of pipe and velocity
 itself. Average for clean iron pipes is 0.02

l = length of pipe in feet

d = diameter of pipe in feet

This formula omits "Curve head" which may be disregarded
 unless there are many sharp curves in the pipe line ; and "obstruction
 head" which would occur if there were valves or other obstruction in
 the line.

For ordinary practical purposes then, we may simplify our
 formula to

$$v = \sqrt{\frac{64.3h}{1.5 + \left(\frac{0.02l}{d}\right)}}$$

If greater accuracy is desired it is necessary to solve first for
 an approximate "v", with average friction factor of 0.02. Using the
 approximate "v" thus found, find correct "f" from table below.

Again solve for v using correct f .

Table * of Friction Factors (f) for Clean Iron pipes.

Diameter of pipe in feet.	Velocity in feet per second.				
	2	4	6	10	15
0.05	0.041	0.034	0.031	0.029	0.028
0.1	0.032	0.028	0.026	.024	.023
0.25	0.028	0.025	0.024	.022	.021
0.5	0.026	0.023	0.022	.020	.019
0.75	0.025	0.022	0.021	.019	.018
1.00	0.024	0.021	0.020	.018	.017

* From Merrimans "Treatise on Hydraulics".

Having determined the velocity we may now solve our original formula

$$q = av.$$

This gives us quantity in cubic feet per second. To obtain result in gallons multiply by 6.24. For quantity per minute multiply by 60; per hour, by 3600.

The following problem illustrates the use of the above formulae:

Given a 3 inch diameter pipe 5300 feet long. Required to know the quantity of water obtainable in gallons per minute with a head of 103 feet. Then $h=103$, $l=5300$ and $d=3''=0.25'$

Putting these values in our velocity formula we get

$$\text{Trial } v = \sqrt{\frac{64.3 (103)}{1.5 + \left(\frac{0.02 (5300)}{0.25}\right)}} = \sqrt{\frac{6622.9}{425.5}} = 3.94 \text{ ft. per second}$$

Correct f from Table = 0.025

Using this f in our formula we get:

$$\text{Final } v = \sqrt{\frac{64.3 (103)}{1.5 + \left(\frac{0.025 (5300)}{0.25}\right)}} = \sqrt{\frac{6622.9}{531.5}} = 3.53$$

$$v = 3.53 \text{ ft per second}$$

$$a = \frac{v^2 D^2}{4} \text{ or } 0.7854 D^2 = 0.049 \text{ ft.}$$

Substituting in formula: $q = a v$, we get

$$q = 0.049 (3.53)$$

$$q = 0.173 \text{ cubic feet per second}$$

$$q \text{ in gallons per minute} = 0.173 \times 6.24 \times 60$$

$$q = 64.77 \text{ gals per minute.}$$

The case often arises in which the quantity of water which you want to get is known and you wish to determine the size of pipe required to furnish that quantity, under given conditions of head and distance.

Following is the formula:

$$d = 0.4789 \left[(1.5d + fl) \frac{q^2}{h} \right]^{1/5}$$

$$\text{This may also be written } d = 0.4789 \sqrt[5]{(1.5d + fl) \frac{q^2}{h}}$$

in which d = diameter of pipe in feet

f = friction factor

l = length of pipe in ft.

q=quantity in cubic feet per second

h=head in feet, or difference in elevation.

For an approximate solution neglect "d" on the right hand side of the equation, and let $f = 0.02$. Then

$$\text{approximate } d = 0.4789 \left[(1.5 + 0.021) \frac{q}{h} \right]^{1/5}$$

For an accurate solution the following *additional* steps are necessary.

(1) Find V from formula $V = \frac{q}{a}$ or $V = \frac{q}{0.785 d^2}$ using the approximate d just solved above.

(2) Using the value of "v" found in (1) and the approximate "d" look up correct "f" in table of Friction Factors.

(3) Resolve for d in the original equation, using on the right hand side the approximate "d" for "d" and the correct "f"

Following is a problem illustrating the use of the above formulae: With a head of 4 feet in a distance of 5000 ft, a discharge of 2493 gals per hour is desired. What is the diameter of the pipe required to give this discharge?

2493 gals per hour = 41.55 gals per minute = $1/9$ cubic ft. per second = q

h = 4 ft, l = 5000 ft, then,

$$\text{approximate } d = 0.4789 \left[(1.5 + (0.02)5000) \frac{1}{4} \right]^{1/5}$$

$$= 0.4789 \left[\frac{101.5}{324} \right]^{1/5}$$

$$= 0.37 \text{ ft.}$$

$$V = \frac{q}{a} = \frac{1/9}{0.785 (0.37)^2} = \frac{0.1111}{0.1085} = 1.0 \text{ feet per sec.}$$

Correct "f" from table, (inter-polating) = 0.030

Using correct f and approximate d and solving for correct d we have

$$d = 0.4789 \left[\left\{ (1.5 \times 0.37) + (0.37 \times 5000) \right\} \frac{1/81}{4} \right]^{1/5}$$

$$= 0.4789 \left(\frac{150.56}{324} \right)^{1/5}$$

$$= 0.40 \text{ ft or } 4\frac{1}{2} \text{ inches diameter of pipe required.}$$

*Extract from entries in the Forest Range
Note Book of
Namakkal Range.*

Data for calculation of yield of sandalwood.

The lists in Forms I (a), II (a) and III (a) for Puliyansholai for the year 1918-'19 were used to compile statements showing the average yield per tree of rough cleaned and final cleaned wood. Six inch girth classes were adopted. The results of one single year cannot be claimed to be the rule for the whole reserve but data has to be arrived at every year so that in course of time, the proper average can

be struck. Separate figures were obtained for each of the three consignments sent from Puliansholai R. F. and the following are the averages of the three consignments:-

Girth class.	Rough cleaned yield per tree.		Final cleaned yield per tree.		No. of trees from which average was struck.
0 to 6"	0 qrs	21 lbs.	0 qrs	1 $\frac{3}{4}$ lbs.	5
7" to 12"	0 qrs	18 lbs.	0 qrs	8 lbs.	55
13" to 18"	0 qrs	25 lbs.	0 qrs	18 lbs.	111
19" to 24"	2 qrs	6 lbs.	1 qr	21 lbs.	52
25" to 30"	4 qrs	10 lbs.	3 qrs	17 lbs.	35
31" to 36"	8 qrs	5 lbs.	6 qrs	21 lbs.	6
Over 36"	14 qrs	27 lbs.	12 qrs	14 lbs.	5

The results in the 0 to 6" girth class as also in the last two cannot be reliable owing to the very small number of trees from which the data has been arrived at.

(Sd.) S. G. VENKATRAMANA IYER,
20—3—19.

A private sandalwood contractor (Swami Reddiar) asked me if I could tell him from experience what his 97 trees would yield. I used the above data and put down the yield at 1 $\frac{1}{2}$ tons of final cleaned wood. It was on 9th. Jan. '19. Now at the end of March '19, the actual final cleaned yield is found to be 1 Ton 38 $\frac{1}{4}$ qrs. i. e. it fell short of my estimate by only 1 $\frac{1}{4}$ qrs.

(Id.) S. G. V.
30—3—19.

1920-21. The trees marked in Shelur Reserve and Unreserves prior to 1918 were not extracted in the previous years as the Spiked trees operations intervened. In the original marking perfectly healthy trees were marked as "dying" for the sake of outturn. Re-marking was done selecting only dead and *really* dying trees for extraction. The re-marking was checked very nearly *cent per cent* by the Range Officer. A girthwar abstract of the trees marked and extracted is given below.

	7 in to 12 in	13 in to 18 in	19 in to 24 in	25 in to 30 in	31 in to 36 in	37 in to 42 in	Over 42 in	Total.
Shelur R. F.	6	10	2	2	..	..	..	20
Shelur unreserves.	36	58	41	30	7	9	3	184
Anticipated final-cleaned yield on 16-4-1920.	Qrs. 11 lbs. 4	Qrs. 41 lbs. 20	Qrs. 75 lbs. 7	Qrs. 115 lbs. 6	Qrs. 47 lbs. 7	Qrs. 108 lbs. 0	Qrs. 398 lbs. 16	

It is very interesting to note that when I submitted the estimate on 16-4-1920 I forecasted the yield as 398 Qrs. 16 lbs. which turned out very nearly to be the actual yield which was 396 Qrs. 12 lbs. on 16-9-1920.

(Id.) S. G. V.
3-10-1920.

S. G. VENKATRAMANAN.

31—10—1924.

Range Officer, Kallakurichi.

Cricket Season 1924.

The College in common with all other teams competing for the Y. M. C. A. shield, with the exception of the Gymkhana, had not nearly such a strong team this year. Of last year's team, only four remained, and from the beginning we very much missed our quartet, Messrs. Ward, Bhandari, Perera and Jayasundara any one of which could be relied upon either with bat or ball. The 1924-26 Division only brought us one however, Devekar, and no batsman, but constant practice produced a very efficient fielding side, and during the season several really good catches were taken. Tanpure distinguished himself in slips on two or three occasions, and Lagu proved a very safe catch in long field; but probably the best catch of the year was taken by Kureshi at mid on from a very hot drive.

We had easy victories over our old opponents, the Agricultural College, and also the Podanur Club, while rain interfered with our match in the Stanes School, and the Government College scratched. Against the Gymkhana we had most exciting matches. The first match played on our ground resulted in a narrow victory for us in the first innings, - scores 106 and 120, but the second innings brought about our downfall. The Gymkhana by determined hitting soon realised 123 for 1 and declared, leaving us one hour and ten minutes to play. At the end of an hour, all our wickets were down for 49!

Our next attempt was spoiled by rain, our first innings realising only 58 on a thoroughly unreliable wicket. At the interval

for lunch, four of the Gymkhana wickets were down for 15 runs, Devekar having secured 3 wickets for 8, and Khan 1 for 7. Unfortunately, further play was impossible owing to heavy rain, and the match was replayed on Armistice day.

The Gymkhana won the toss, went in first, and made 125, to which we replied by 119, losing in the first innings by 6 runs. In the second innings, the match looked quite rosy for us, when 7 wickets were quickly down for 41, but rain and a good stand by the 8th man delayed things and the innings was finally closed at 92, only leaving us 25 minutes to play. We did our best but time found us with four wickets down for 49.

The Gymkhana thus takes the shield from us but we look forward to re-taking it next year.

<i>Batting averages.</i>		<i>No. of innings</i>	<i>Average.</i>	
1. Mr. Williams	...	6	...	22
2. Phillips	...	8	...	16
3. Mr. Wilson	...	7	...	14
<i>Bowling averages.</i>		<i>No. of wickets.</i>	<i>Average runs per wicket.</i>	
1. Khan Mohammed	...	41	...	7.6
2. Devekar	...	39	...	7.7
3. Phillips	...	19	...	10.0

The highest score of the year was made by Lagu against the Agricultural College, 50 not out, a very fine display of courage and a good eye. The following colours have been awarded:—

Khan Mahommed.
Phillips.
Devekar.
Tanpure.

C. R. F. W.

*List of winners at the Madras Forest College
Athletic Sports, 1924.*

We publish below, the names of the winners for the various events of the Athletic Sports held in September last:—

I. 100 yards flat race:

- 1st Khan Mohammed.
- 2nd M. M. Rahim.

II. Half mile flat race.

- 1st L. G. Lagu.
- 2nd R. D. Phillips.
- 3rd Mohammed Kassim.

III. 120 yards hurdle race.

- 1st K. M. Verghese.
- 2nd R. Ramasawmi.
- 3rd Khan Mohammed.

IV. High Jump.

- 1st B. John.
- 2nd Khan Mohammed.
- 3rd L. G. Lagu.

V. Throwing the Cricket ball.

- 1st K. Bannerji.
- 2nd L. C. Lagu.
- 3rd Mohammd Kasim

VI. Mile

- 1st L. G. Lagu
- 2nd R. D. Phillips.

VII. Quarter mile.

- 1st L. G. Lagu.
- 2nd A. Sattar.
- 3rd Khan Mohammed.

VIII. Long Jump.

- 1st Khan Mohammed.
- 2nd R. D. Phillips.
- 3rd S. S. Harisinghari.

IX. Obstacle Race.

- 1st K. Bannerji
- 2nd S. S. Harisinghani.
- 3rd B. John.

X. Relay race.

Winning Team: Central Provinces.

XI. Sack Scrimmage:

Winning team: Bombay.

—Ed.

Germination of Seeds exposed to low Temperatures.

By H. F. Roberts, University of Manitoba.

This investigation was undertaken in December 1921. Seeds of thirty species were placed in tin containers (druggists' ointment tins), one lot being left indoors in the laboratory, at a temperature of 75° F.

the other lot being exposed out of doors, for 83 days, from January 9 to April 2. In both cases the seeds were kept perfectly dry. After the conclusion of the period indicated, the seeds of both lots were germinated between blotters for 10 days in the laboratory, at a temperature of 72°. 75° F. One hundred seeds were tested from each lot, the germinated seeds being counted on the fifth, seventh, and tenth days. Fifteen varieties of garden seeds, belonging to seven species, gave a germination percentage at the end of 10 days of 67 per cent. to 63 per cent. in favour of the indoor lots. For eleven varieties, belonging to eight species, the germination percentage at the end of 10 days was as 70 per cent. to 66 per cent., also in favour of the indoor lots. The twenty-six varieties gave an average percentage germination at the end of 5, 7, and 10 days of 42 : 36, 62 : 58, and 69 : 65 respectively, for the indoor and the outdoor lots, or a preponderant percentage superiority of 6 per cent., 4 per cent., and 4 per cent, respectively, for the three successive periods, in favour of the lots kept indoors.

From the above summary, it appears that a small average increased germination percentage occurred in the case of seeds kept at laboratory temperature. It was noticed that the seeds of cool temperate species developed a germination percentage higher by 25 per cent (54 : 29) than those of the warm temperate species kept at laboratory temperature, during the first 5 days of the germination period, although the increased percentage was but 14 per cent. (43 : 29) in favour of the same group exposed to the outside winter temperature. The total germination percentage, however, was approximately the same in both cases.

The mean temperature out of doors for the period of the experiment was as follows, in degrees Fahrenheit: Jan. +3.0, Feb. +0.4, Mar. +24.7, Apr. +41.5, May +60.0.

In the winter of 1923, another lot, consisting of fourteen species, in thirty-three varieties, all of them cool temperate vegetable and field seeds, were exposed as before on January 26. On May 12 the different lots of seeds were tested for percentage of germination. In the preceding year's experiment the germination test was made in the laboratory for plant physiology of the University of Manitoba. In the second year the germination tests were conducted in the official Dominion Seed Laboratory at Winnipeg. The results obtained were as follows: As the average of the summary shows, there was a difference of 4 per cent. in favour of the seeds kept at laboratory temperature,—about 2 per cent. less than the average at the end of 10 days for the twenty-six species and varieties tested the preceeding year. At all events, the results, although not conclusive, at least point to a slight diminution in total vitality, as the result of continued exposure to low winter temperatures at the latitude of Manitoba. It should be stated that all the seeds tested were in a thoroughly air-dry condition before the beginning of the test.

Sixty-six varieties, belonging to 15 species, were tested, including carrot, Swedish turnip, mangel, sugar beet, barley, flax, crimson and white clover, cucumber, cauliflower, celery, egg plant, and cabbage. The total averages for all varieties tested were as follows:

			4.day test.	10-day test.
Inside	...	...	56	73
Outside	...	...	57	75

There is therefore seen to be practically no difference in the results as between the seeds kept indoors and those kept outside. If some of the individual cases are examined separately, three varieties of carrots gave at the final test 69 per cent and 98 per cent. respectively for the seeds outside and inside; six varieties of Swedish turnip, 75 per cent and 75 per cent; three varieties of mangels, 56 per cent. and 62 per cent; three varieties of turnip, 71 per cent. and 73 per cent; three varieties of cucumber, 79 per cent. and 81 per cent; four varieties of cabbage, 98 per cent. and 77 per cent.

It thus appears when the details can be taken in numbers sufficient to indicate an average result, that the data agree with the general average. Inasmuch as the data herein are at variance with the general experience of practical men, horticulturists, etc., with regard to the practical utility of chilling seeds, it is concluded that the general factor of moisture is the effective one, and that the layering of seeds in a moist substratum accounts for the effectiveness of the practice, rather than the temperature factor alone.

—*Extract from 'Nature' dated Sep. 13, 1924.*

Correspondence.

Camp, CHILKANAHATTI,
21st October, 1924.

To,

The Editor,

The Madras Forest College Magazine

Sir,

I see in the September number of the Madras Forest College Magazine a reference to a new transplanting tool known as the "DUIVEL TREE-PLANTER". A similar tool has been used for a good many years by tea planters, to whom it is known simply as a "TRANSPLANTER". It is used for planting out tea bushes at six months instead of the usual two years, which is by many considered an advantage, as it avoids disturbance of the root system which would occur at the more advanced age. It requires, however, very skilled labour for successful use on a large scale, and is hardly suitable for forest work.

This tool is now being used successfully in Kenya Colony, where tea is being planted extensively.

Yours faithfully,
C. C. WILSON.

Additions to the Madras Forest College Library.

1. Forest bulletin No. 57 1923—Tan investigation of Pinus Khasya bark, and Pyinkado (Xylia dolabriformis).—By J. A. Pilgrim.
2. Empire Forestry Journal. Appendix No. 1, 1923. List of Forest Officers of the British Empire.

3. A note on some European Sylvicultural systems with suggestions for improvements in Indian Forest Management.—By, R. S. Troup 1916.

4. Proceedings of the Conference of Forest Panchayats at Saidapet, dated 23rd March 1924, including five lectures on the benefits of Forest Panchayat system.

5. Forest Flora of the Siwalik and Jansur Forest Divisions, of the United Provinces of Agra and Oudh; By Kanjilal.

6. A Revised Working Plan for the Kangra and Hoshiarpur Divisions,—By O. H. Walters, 1920-21 to 1929-30.

7. Flora of the Presidency of Madras—By, J. S. Gamble, Part VI.

8. Working Plan for the Zigon Forest Division for the period 1923—24 to 1932-33.—By E. F. A. Hay, B. A., Vol. I Parts 1 and 2.

9. Special Funds Code, Second Edition 1907.

10. Growing larch for profit.—By,—Sir William Schlich.

11. Forest Bulletin No. 58. General Volume Table for Chir Pine (*Pinus longifolia*).—By, S. H. Howard, B. A., 1924.

12. The Malabar Timbers—By, Mr. A. Brown.

13. 'The Sylviculture of Indian Trees' By, R. S. Troup; Volumes I II and III—*Presented by C. C. Wilson Esq., I. F. S.*

14. Working Plan for the forests of Chittagong and Cox's Bazar Divisions—By J. M. Cowman. M. A., Bsc.

15. The American Lumber Industry—By Nelson Courtlandt Brown.

16. Key to the Eucalypti of Western Australia, with descriptive botanical notes etc.—By S. L. Kessell, and C. A. Gardiner.

17. Memoirs of the Indian Museum, Vol V. Fauna of the Chilka lake, Nos. 12 and 13.

Presented by H. A. Latham Esq., I. F. S. (18 to 38.)

18. The Natural History of Plants.—By F. W. Oliver M. A., Vols. I and II.

19. Saw-mills, their arrangement and management.—By M. Powis Bab Esq.

20. Supplement to "Drury's useful Plants of India".

21. A hand book of Cryptogamic Botany—By George Murray F. L. S.

22. 'The Forest Trees of Travancore'—By T. F. Bourdillon F. L. S.

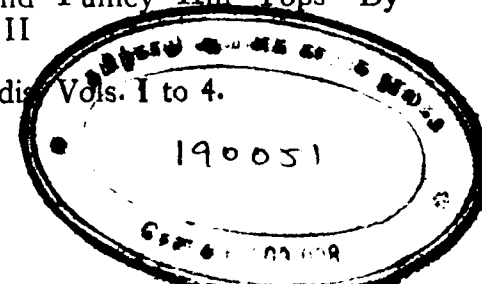
23. First Book of Indian Botany.—By D. Oliver.

24. The Organisation and valuation of Forests, on the Continental system in theory and practice.—By J. L. L. Macgregor.

25. Timber and Some of its diseases. By H. Marshall Ward. M. A.

26. The Flora of the Nilgiri and Pulney Hill Tops—By F. F. Fyson, M. A. F. L. S. Vols. I and II

27. Indian Trees—By D. Brandis Vols. I to 4.



28. Fungi and disease in plants. An introduction to the diseases of field plantation Crops.—By, E. J. Butler M. B., F. S. S.

29. The Fauna of British India; (Arachnidae).

30. The Common birds of Bombay—By, E. H. A.

31. Indian Birds; being a Key to the common birds of the plains of India.—By Douglas Dewar.

32. English Timber and its economical conversion—By Acorn.

33. Elements of Geology—By Sir Charles Lyell. F. R. S.

34. Spike disease of Sandal—By L. C. Coleman, M. A., P. H. D.

35. Poisonous terrestrial Snakes of British India—By Major F. Wall, Msc. MZ. S.

36. The Rod India; being hints hints how to obtain Sport, with remarks on the natural history of Fish, their culture, value etc.—By Henry Sullivan Thomas.

37. Diseases of plants induced by Cryptogamic parasites Introduction to the study of pathogenic fungi, bacteria and algae—By Dr. K. F. Tubeuf and W. G. Smith.

38. The Madras Forest College Magazine Volumes I to VIII and Volume IX No. 1,

39. 100 Botanical bulletins of the Presidency College, Madras, with Index)

Contributions to the Gass Forest Museum.

Serial No.	Contribution.	Contributor.
1.	Twenty two specimens of Bostrychidae.	Dr. C. F. C. Beeson, I. F. S. F. E. S. Imperial Forest Entomologist Dehra Dun.
2.	Specimen of Twin-bamboo (a freak)	M. R. Ry. K. G. Belliappa Avl. E. A. C.
3.	Skull of a Bison. (spread of horns 43½")	Mr. T. T. Ansep, Range officer, Chedleth Range.
4.	Catterpillar attacking Teak leaves	Range officer Tunaccadavu Mt. Stuart.
5. (a)	Larvæ of <i>Eublema scitula</i> .	J. A. Wilson Esq., I. F. S.
(b)	A <i>Braconid</i> wasp.	
(c)	Larvæ & imago of <i>Pyrausta Machaeralis</i>	
(d)	A Carpenter bee.	

Indian Forester Prize 1925.

(PAST STUDENTS).

A prize allotted from the "Indian Forester" Fund will be awarded to the past student of the Madras Forest College who submits the best essay on the following subject:—

Early Burning, versus

Complete Fire Protection.

Which do you consider to be the best for forest areas and why?"

No award will be made unless a satisfactory standard is reached.

Essays should be clearly written or typed on one side of the paper only, and should not exceed 2,000 words; they must reach the Principal, not later than the 10th, nor earlier than the 1st, May 1925.

Each essay must bear a *nom de plume*; which must also be written on the outside of a sealed envelope inside which is a paper containing the name of the competitor. The name of the competitor must not appear on the outside of the envelope, or on the essay. Each must be the unaided work of the competitor submitting it.

C. R. F. WILLIAMS,
Principal,
Madras Forest College, Coimbatore.

Gazette Notifications.

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2—9—1924.

Mr. M. C. Chandy, District Forest Officer, East Salem, will, on relief by Mr. T. Clear, be attached to the East Salem Division.

9—9—1924.

Mr. O. J. Van Haeften, Extra Assistant Conservator of Forests, on return from leave, is posted for duty under the Chief Forest Engineer.

Mr. M. F. Bridge, Deputy Conservator of Forests on Special duty under the Chief Forest Engineer is granted leave on average pay for three weeks with effect from 22nd. August 1924.

Mr. B. K. Roy, District Forest Officer, South Cuddapah, is granted leave on average pay for six weeks with effect from 28th September 1924.

Saiyid Biaz-ud-din Sahib Bahadur, Extra Assistant Conservator of Forests, South Cuddapah Division, to be in charge of the South Cuddapah Division during the absence of Mr. B. K. Roy on leave.

16—9—1924.

Mr. M. F. Bridge, Deputy Conservator of Forests, on special duty under the Chief Conservator of Forests, is granted leave on average pay for three weeks with effect from 22nd August 1924.

Mr. J. C. Wrench, Assistant Conservator of Forests, Bellary, to special duty in the Chittoor District under the orders of the Conservator of Forests, Third Circle.

28—9—1924.

Mr. K. T. Mathew, Assistant Conservator of Forests on probation,

Indian Forester Prize 1925.

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C. R. F. WILLIAMS,
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Madras Forest College, Coimbatore.

Gazette Notifications

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2—9—1924.

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9—9—1924.

Mr. C. J. Van Haeften, Extra Assistant Conservator of Forests, on return from leave, is posted for duty under the Chief Forest Engineer.

Mr. M. F. Bridge, Deputy Conservator of Forests on Special duty under the Chief Forest Engineer is granted leave on average pay for three weeks with effect from 22nd. August 1924.

Mr. B. K. Roy, District Forest Officer, South Cuddapah, is granted leave on average pay for six weeks with effect from 28th September 1924.

Saiyid Riaz-ud-din Sahib Bahadur, Extra Assistant Conservator of Forests, South Cuddapah Division, to be in charge of the South Cuddapah Division during the absence of Mr. B. K. Roy on leave.

16—9—1924.

Mr. M. F. Bridge, Deputy Conservator of Forests, on special duty under the Chief Conservator of Forests, is granted leave on average pay for three weeks with effect from 22nd August 1924.

Mr. J. C. Wrench, Assistant Conservator of Forests, Bellary, to special duty in the Chittoor District under the orders of the Conservator of Forests, Third Circle.

23—9—1924.

Mr. K. T. Mathew, Assistant Conservator of Forests on probation,

ii.

is posted for duty under the Chief Forest Engineer.

30—9—1924.

Mr. T. Clear, acting Conservator of Forests, II Circle, leave on average pay for six weeks with effect from the date of relief by Mr. C. C. Wilson.

7—10—1924.

M. R. Ry. A. Raju Nayakkar Avergal, Extra Assistant Conservator of Forests on return from leave, to be District Forest Officer, South Kurnool.

14—10—1924.

M. R. Ry. S. Ramaswami Ayyar Avergal, Extra Assistant Conservator of Forests, on relief by M. R. Ry. A. Raju Nayakkar Avl., to be attached to the Nilambur division.

M. R. Ry. S. Ramaswami Ayyar Avl., Extra Assistant Conservator of Forests, is granted leave on average pay for one month, on relief by M. R. Ry. A. Raju Nayakkar Avl.

M. R. Ry. M. Srinivasaraghava Acharya, Extra Assistant Conservator of Forests, on relief by Mahammad Abdul Hafiz Sahib Bahadur, to be attached to the East Kurnool division.

21—10—1924.

Captain H. A. Irwin, M. O. Forest Engineer, privilege leave for two months and twenty seven days, and in continuation there of furlough on average pay for five months and three days with effect from the date of relief.

Mr. H. A. Latham, Conservator of Forests, leave on average pay for three months and twenty eight days, and in continuation thereof furlough on average pay for one year eight months and fourteen days with effect from or after 28th November 1924.

iii.

M. R. Ry. K. Veeraswami Ayyar Avergal, Forest Panchayat Officer is granted leave on average pay for seventeen days with effect from 20th October 1924.

Mr. S. K. Basu, Assistant Conservator of Forests, South Mangalore, is granted leave on average pay for one month and thirteen days from 10th November 1924, with permission to affix the ensuing Christmas holidays.

28—10—1924.

M. R. Ry. M. Srinivasaraghava Acharya, Extra Assistant Conservator of Forests, will be attached to the West Kurnool Division. This cancels the notification attaching him to the East Kurnool division.

4—11—1924.

M. R. Ry. V. Narayana Ayyar Avl., Extra Assistant Conservator of Forests, on return from leave is attached to the IV Circle.

Notifications relating to Rangers.

H. Tireman Esq.,

Ag. Chief Conservator of Forests.

31—10—1924:

“The following Rangers are transferred to the Forest Engineering Branch:—

- | | | |
|----|--------------------------------|-----------------------|
| 1. | Mr. A. B. Fenn, From V Circle. | |
| 2. | M. R. Ry P. Sankunni Nair | } From the VI Circle. |
| 3. | „ P. Kannan | |
| 4. | „ T. Paramasivam Pillai ... | From the III Circle. |
| 5. | „ T. D. Ponniah ... | From the IV Circle. |

iv.

The Conservators concerned are requested to order these Rangers to report themselves at once for duty to the Logging Engineer at Mangalore.

2. Mr. A. Joseph, Ranger, II Circle and M. R. Ry. S. Chidambara Ayyar, ranger, III Circle are transferred to the VI Circle. They should join expeditiously.
3. The Conservator, II Circle is requested to select a Ranger at once for transfer to the Engineering Branch in the place of M. R. Ry. Y. Peddalakshmi Naidu granted leave. He is requested to spare one more man at once, if necessary doubling up two ranges in Anantapur.

First Circle

13—9—1924.

1. On expiry of the leave granted to M. R. Ry. K. Venkatesam, Supernumerary Ranger, Upper Godavari in this office S. O. No. 36 dated 30—8—1924 he is transferred to Ganjam district. Orders regarding his posting will be issued by the District Forest officer, Ganjam. His leave expires on 25—9—1924 afternoon.

8—10—1924.

2. Under Rule 81 of the Fundamental Rules M. R. Ry. M. Subba Rao Forest Ranger VI grade, Ganjam, is granted leave on average pay for three months with effect from 26th September 1924 or date of relief with permission to affix the ensuing Christmas holidays to the leave

20—10—1924.

3. M. R. Ry. B. V. Nagaraja Ayyar, Ranger II grade subprotem is posted to Rajahmundry Range.

v.

22—10—1924.

4. Under Rule 81 of the Fundamental Rules I Sambasiva Rao Naidu Ranger VI grade Godavari Upper is granted leave on average salary for three months with effect from or after 1st November 1924.

Second Circle.

25—10—1924.

5. Under Rule 81 of the Fundamental Rules M. R. Ry. T. S. Ratnavelu Mudaliar, Ranger VI grade, Godavari Lower, is granted leave on average salary for two months with effect from date of relief by Ranger M. R. Ry. B. V. Nagaraja Ayyar.

29—11—1924.

6. M. R. Ry. M. Subba Rao, Ranger VI grade on return from leave. (3-1-1925) is posted to Ellore Range.

11—9—1924.

7. M. R. Ry. P. Gopalan Supernumerary Ranger, Sirvel Range on relief by M. R. Ry. C. Rangaswami Naidu is granted leave on average pay for one month.

He should join the Bairlutty Range for special duty after the expiry of the leave now granted.

11—9—1924.

8. M. R. Ry. B. Krishna Rao Supernumerary Ranger in charge of Bellary Range on relief by Ranger N. Sundaresa Iyer is posted to Kurnool South division to work under the Extra Asst. Conservator on working Plan duty in Chelama Range.

vi.

11—9—1924.

9. M. R. Ry. D. N. Subramania Iyer Ranger VI Grade on leave posted to Kurnool Range in this office S O. No. 53-1924 dated 28-8-1924 is granted an extension of leave on average pay on Medical Certificate for 20 days in continuation of the leave already granted to him.

He should join the Kurnool Range after the expiry of the leave. The existing arrangements will continue.

18—9—1924.

10. M. R. Ry. N. Sundaresa Iyer, Ranger III Grade. Bellary Range is granted an extension of leave on average pay on Medical Certificate for 15 days in continuation of the leave sanctioned to him in this Office S. O. No. 49-1924 dated 11-8-1924.

The existing arrangements will continue.

19—9—1924.

11. The promotion to VI Grade Sub Protom of the Supernumerary Ranger V. N. Subramania Iyer ordered in Chief Conservators Proceedings No 234 Rt dated 2-6-1924 should take effect from 16-8-1924 the date on which the new Range (Sultan's Battery Range) was formed in the Wynad Division.

24—9—1924.

12. M. B. Ry. Y. Venkataswami Naidu Range Officer, Sivapuram Range on relief at Atmakur on 7-9-1924 will be considered to have been on special duty in Kurnool west division from 8—9—1924 forenoon till 25-9-1924 forenoon; thereafter joining time admissible under the Rules will be allowed to him from Nandyal to Macherla.

vii.

13. M. R. Ry. Y. Peddu Lakshmiah Naidu, Ranger VI Grade, Markapur Range, Kurnool East Division is granted leave in anticipation of the Medical Certificate promised by the District Forest Officer, Kurnool East in his reference C. 1265 H-2-1924 dated 29-9-1924. To go on relief by No. 2.

The nature and period of leave will be decided on receipt of further report from the District Forest Officer.

2. M. R. Ry. A. Vyasulu, Ranger VII Grade, Guntur district under orders of transfer to Kurnool West division is posted to Markapur Range, Kurnool East division. To join expeditiously.

4—10—1924.

14. Mr. I. John, Ranger VII Grade reinstated by Government in their memo No 2484-I-24-1 dated 22-9-24 communicated with the Chief Conservator's Ref. No. 6907 of 1924-B4 dated 29-9-24 is posted to be in charge of Kudligi Range, Bellary division

2. M. R. Ry. T. Sriramula Naidu, Ranger VII Grade, Kudligi Range on relief by No. 1 is posted to Kurnool west division, for range charge.

The posting of Ranger A Vyasulu to Kurnool West division ordered in this office S. O. No. 52-24 dated 21-8-24 is cancelled.

15. M. R. Ry. O Venkataramana Iyer, Ranger I Grade on return from leave is posted to Dornal Range, Kurnool East Division.

2. M. R. Ry. T. M. Krishnamachari, Supernumerary Ranger in charge of Dornal Range on relief by No. (1) to do special duty in the same division under the orders of the District Forest Officer, Kurnool East.

6—10—1924.

16. M. R. Ry. P. Gopalan, Supernumerary Ranger, Kurnool South division, on return from leave is posted to Bellary division to work under the orders of the District Forest Officer.
2. M. R. Ry. V. N. Subramania Iyer Ranger VI Grade Sub Protom attached to Nandyal Range is posted to special duty (Rudracode building work) in Kurnool West Division.
17. M. R. Ry. C. G. Ganapathi, Ranger III Grade is granted an extension of leave without allowances on Medical Certificate for one year in continuation of leave sanctioned to him in this office S. O. No. 83-1923 dated 12-9-23.

11—10—1924.

18. The whole period of leave availed of by M. R. Ry. M. Subbarayalu Naidu from 17—7—1924 to the date of his joining duty at Tadpatri on 5—9—1924 will be treated as *leave on loss of pay*.

19—10—1924.

19. Mr. I. John Ranger VII Grade posted to Kudligi in this Office S. O. No. 73-24 dated 8-10-24, is transferred to be in charge of Harpanahalli Range. To proceed immediately and relieve No. 2.
2. M. R. Ry. N. C Mahadevan Pillai Ranger III Grade on relief by No. 1 is posted to be in charge of Kudligi Range vice M. R. Ry. T. Sriramulu Naidu transferred to Kurnool West.

19—10—1924.

20. M. R. Ry. O. Venkatramana Iyer, Ranger I Grade posted to Dornal Range, Kurnool East Division, in this office S. O. No. 71-24 dated 4-10-24 is granted an extension of leave on average pay on Medical Certificate for 3 (three) months in continuation of the leave already sanctioned to him.

2. The existing arrangements will continue.

26—10—1924.

21. M. R. Ry. Y. Pedda Lakshmiah Naidu Ranger VI Grade, Markapur Range, Kurnool East Division is granted leave on average pay on Medical Certificate for two months from the date of relief (afternoon of 23-10-1924) by Ranger A. Vyasulu.

1—11—1924.

22. M. R. Ry. G. N. Subba Rao Ranger VI Grade is granted an extension of furlough on Medical Certificate under the old leave rules for three months from 11-11-1924.

3—11—1924.

23. J. B. Rodrigues, Supernumerary Ranger, special duty, Guntur District, is posted to West Kurnool Division to work under the orders of the District Forest Officer, West Kurnool.

5—11—1924.

24. 1. Mr. A. Joseph, Ranger VI Grade, Bukkapatnam Range, Anantapur Division, is transferred to the VI Circle. To report himself at once for duty to the Conservator VI Circle after handing over charge to the Range Officer, Kadiri immediately. He should not take any more joining time than is absolutely essential.

2. M. R. Ry. M. Kristna Rao Ranger III Grade (Sub protom), Kadiri Range is posted to be in additional charge of Bukkapatnam Range *temporarily*. To relieve No 1 *at once*.

He will receive the additional allowance under Fundamental Rules, due to his being put in charge of an additional Range.

12—11—1924.

25. Mr. Abdul Rahim Khan, Ranger, VI Grade, Vinukonda Range, Guntur District is posted to be in charge of Gundlakamma Range, South Kurnool Division. To relieve No. (2) on relief by No. (3) Supernumerary Ranger P. Gopalan, Bellary.

(2) M. R. Ry. B. Krishna Rao, Supernumerary Ranger who is now in temporary charge of Gundlakamma Range to continue in South Kurnool Division as Assistant to the Extra Assistant Conservator on working plan duty.

- (3) M. R. Ry. P. Gopalan Supernumerary Ranger on special duty in Bellary Division is posted to be in charge of Vinukonda Range.

To join *expeditiously* and relieve No. (1).

14—11—1924.

26. M. R. Ry. K. Tiruvengatachari, Ranger V grade Dhone Range West Kurnool Division is transferred to the Forest Engineering Branch. To hand over charge *at once* to Supernumerary Ranger J. B. Rodrigues, who will join in 2 or 3 days and then to report himself for duty before the Logging Engineer at Mangalore.

(2) Supernumerary Ranger J. B. Rodrigues who was posted as Special duty Ranger Kurnool West to relieve No. 1 at once.

14—11—1924.

27. M. R. Ry. B. Ponniah Panthulu, Ranger IV Grade, Bailduty Range, West Kurnool Division is granted an extension of leave without medical certificate till the commencement of X'mas holidays in continuation of the leave already granted to him in this office S. O. No. 46/8-8-24. He is also permitted to avail

himself of the Christmas holidays and New Year's day. He is entitled to average pay for 26 days only, and *half* average pay for the remaining period.

(2) The existing arrangements will continue.

19—11—1924.

28. Mr. I. John Ranger VII Grade, Harpanahalli Range, Bellary Division is transferred to VI Circle. To hand over charge on receipt of final orders, which will be sent by wire from this office, to No. (2) and proceed to the Range which is selected by the Conservator of Forests, VI Circle.

(2) M. R. Ry. N. C. Mahadevan Pillai, Ranger III Grade, Kudligi Range, to be in additional charge of Harpanahalli. To relieve No. (1) *immediately* on receipt of further orders from this office by *Telegram*.

22—11—1924.

29. The whole period of Range Officer M. R. Ry. H. Rama Rao's absence and the one day purporting to be on duty in Anantapur namely 23rd August 24, i.e. (10th to 27th August both days inclusive) are treated as leave on loss of pay.

22—11—1924.

30. In modification of this office S. O. No. 45/28-7-1924. and S. O. No. 82/1-11-1924, M. R. Ry. G. N. Subba Rao, Ranger VI Grade, West Kurnool Division is granted an extension of Furlough on *half* pay on medical certificate for three months from 11th November, 1924 the date mentioned in the sick certificate granted by the I Physician, General Hospital, Madras.

Third Circle.

5—9—1924.

31. M. R. Ry. T. M. Doraiswamy Pillai, Ranger V grade, on return from leave is posted to South Cuddapah District for special duty.

5—9—1924.

32. This Office S. O. No. 64-1924 dated 20-8-1924 posting Ranger Mr. MacBride to Gudiyattam Range is cancelled.

2. M. R. Ry. A. Siddhan Pillai, Ranger IV grade, on return from leave is posted to Gudiyattam Range vice M. R. Ry. A. Ranganayakulu Naidu granted leave.

8—9—1924.

33. M. R. Ry. T. N. Seshagiri Rao, Range Officer, Chingleput Range will be in additional charge of Sriperumbudur Range, relieving M. R. Ry. N. Swaminatha Ayyar, until further orders.

19—9—1924.

34. M. R. Ry. N. Swaminatha Ayyar Ranger I Grade, Sreeperumbudur Range is granted leave on average pay for 3 months and 18 days from date of relief from Sreeperumbudur Range.

22—9—1924.

35. M. R. Ry. S. Chidambara Ayyar Ranger V grade is granted extension of leave on $\frac{1}{2}$ average pay, on medical certificate for two months in continuation of the leave granted to him in this office S. O. Nos. 5-24 dated 17-1-1924, 18-24 dated 29-2-24, 39-24 dated 28-5-24, and 66-24 dated 26-8-1924.

This office S. O. No. 37-24 dated 12-5-1924, posting the Ranger to special duty for conducting thinning operations of Red

Sanders coppice shoots in South Cuddapah District is held in abeyance.

25—9—1924.

36. M. R. Ry. S. Sankara Alwa Ranger VI Grade is granted extension of extraordinary leave without allowance for 1 year, in continuation of the 2 years' leave granted to him in this office Service Order No. 57-1922 dated 12th August 1922.

26—9—1924.

37. Mr. H. Mac Bride, Ranger IV grade on return from leave, is posted to Gudiyattam Range North Vellore Division vice M. R. Ry. A. Ranganayakulu Naidu granted 4 months' leave from date of relief.

This cancels the posting of Ranger M. R. Ry. A. Siddhan Pillai to Gudiyattam Range ordered in this office S. O. No. 68-1924 dated 5th September 1924.

8—10—1924.

38. Mr. E. W. Fernandez Ranger V grade on return from leave is posted to Nellore District to be in readiness to relieve M. R. Ry. T. Paramasivam Pillai of Kavali Range, on receipt of Chief Conservator's orders.

23—10—1924.

39. M. R. Ry. A. Siddhan Pillai Ranger IV Grade is granted extension of leave for 2 months and 11 days on medical certificate consisting of leave on average pay for 2 months and $\frac{1}{2}$ average pay for the rest of the period in continuation of the leave granted in this office Service Order No. 45-1924 dated 13th June 1924.

xiv.

24—10—1924.

40. M. R. Ry. L. Gowindaswami Pillai Ranger V Grade, on return from leave is posted to Chitvel Range in relief of Ranger P. Chengal Reddi.

2. M. R. Ry. P. Chengal Reddi, Ranger VI Grade is granted leave on average pay for 4 months with permission to prefix Christmas Holidays. He will be on special duty for thinning of Red Sander coppice shoots in South Cuddapah till the beginning of the Christmas Holidays.

3. M. R. Ry. S. Vasudeva Reddi Ranger I grade, on return from leave is posted to South Cuddapah District on special duty for thinning of Red Sander Coppice shoots.

41. M. R. Ry. S. Chidambara Ayyar, Ranger V grade on leave is transferred to the VI Circle. The place at which he is to join will be communicated by the Chief Conservator of Forests.

3—11—1924.

42. M. R. Ry. T. M. Doraiswami Pillai Ranger V Grade on special duty in South Cuddapah District is posted to Kavalai Range of Nellore District to relieve M. R. Ry. T. Paramasivam Pillai.

The posting of E. W. Fernandez to Kavali Range ordered in this office Service Order No. 79.1924 dated 8th October 1924 is cancelled.

2. M. R. Ry. T. Paramasivam Pillai Ranger V on relief by No. 1 should report himself at once for duty before the Logging Engineer at Mangalore.

xv.

11—11—1924.

43. Mr. E. W. Fernandez, Ranger V grade on leave, is granted extension of leave on half average salary for 1 month on medical certificate in continuation of the leave granted to him.

11—11—1924

44. Mr. H. Mac Bride, Ranger IV grade Gudiyattam Range North Vellore Division is transferred to the charge of Vellore Range of the same Division.

2. M. R. Ry. S. Ramachandra Ayyar Ranger III grade in charge of Vellore Range will on relief by No. 1 proceed to Gudiyattam and remain in charge of that Range.

15—11—1924.

45. M. R. Ry. S. Vasudeva Reddi, Ranger I grade on leave is granted extension of leave on medical certificate for 2 months (i.e., up to 31—1—1925, leave on average pay for 25 days and the rest of the period on half average pay in continuation of the leave granted to him in this office S. O. Nos. 29 24 dated 3-4-1924. and 40-24 dated 3-6-1924.

15—11—1924.

46. M. R. Ry. T. E. Varadachary, Forest Ranger, IV grade Palmaner Range, is granted leave on average pay for 20 days from the 2nd January 1925 with permission to prefix the Christmas and New year holidays subject to the condition of the subsidiary rules under Fundamental rule 68.

During his absence M. R. Ry. V. P. Narayana Menon, Range Officer, Chittoor, will hold additional charge of Palmaner Range,

19—11—1924.

47. 1. M. R. Ry. S. Ramachandra Iyer Ranger III grade, North Vellore division is appointed to be the Senior Instructor, Vernacular Training School, 1925 session to be held in North Cuddapah Dt.
2. M. R. Ry. N. Rajagopala Chetty Supernumerary Ranger in charge of Sanipaya Range is appointed to be the Junior Instructor of the Vernacular Training School.
3. M. R. Ry. S. Vasudeva Reddi Ranger I grade on expiry of his leave will join Sanipaya Range.

19—11—1924.

48. M. R. Ry. A. Siddhan Pillai Ranger IV grade, on leave is transferred to the VI Circle, Ootacamund. The place at which he is to join will be communicated in due course.

19—11—1924.

49. Mr E. W. Fernandez Ranger V Grade on leave is posted to special duty in Gudiyattam Range, preparatory to relieving M. R. Ry. S. Ramachandra Iyer of Gudiyattam Range, who is posted as Senior Instructor to the Vernacular Training School.

Fourth Circle.

1—8—1924.

50. M. R. Ry., P. Sithapathi Ayyar, Ranger V grade in charge of Tirupattur Range, West Vellore, is granted leave on average salary for 2 months from 8—8—1924
2. M. R. Ry., V. Narayanaswami Ayyar, Ranger V grade, is on return from leave posted to the charge of Tirupattur Range.

8—9—1924.

51. In modification of this Office Service Order No. 53 of 1924, dated 16-7-1924, Supernumerary Ranger S: Nageswara Ayyar will remain in Central Salem Division for 2 months more from 8-9-1924.

10—9—1924.

52. 1. The unexpired portion of leave granted to Ranger P. Sithapathi Ayyar in paragraph 1 of this Office Service Order No. 56 (a) of 1924, dated 1—8—1924, is cancelled, and he is posted to North Salem Division to take up the enumeration of Sandalwood trees in the Berikai and Shulagiri estates.

2—10—1924.

53. The following transfers of Rangers are ordered:-

Name.	From District.	To District.
1. Ramanujam Sesha.	East Salem.	West Vellore to charge of Tirupattur Range.
2. I. Z. Robert Paul.	West Vellore.	East Salem Do. Harur Range.

No. 1 will hand over charge to Chitteri Range Officer and relieve No. 2 expeditiously.

5—10—1924.

54. M. R. Ry., V. Narayanaswami Ayyar, Ranger V grade is, on return from leave on 21-10—1924, posted to the charge of Tirupattur Range, West Vellore Division.

17—10—1924.

55. M. R. Ry., S. Ramalingam Ayyar, Special Duty Ranger, is granted leave on average pay for 14 days from 12th October

1924, on the strength of his signed declaration that he will join duty under the Logging Engineer immediately he receives orders even before the expiry of the leave.

17—10—24.

56. In continuation of this Office Service Order No. 70 of 1924, dated 5—10—1924. Ranger I. Z. Robert Paul, V grade, now in charge of Tirupattur Range, on relief by Ranger V. Narayanaswami Ayyar, V grade, is posted to the charge of Namakkal Range, South Salem Division.

2. Ranger T. V. Govinda Rao, V grade, now in charge of Namakkal Range, South Salem Division, on relief by No. 1 is transferred to Anchetti Range, North Salem Division.

3. Ranger T. D. Rajabhadur Mudaliyar, VI grade, now in charge of Anchetti Range, on relief by No. 2, is transferred to Central Salem Division for charge of Salem Range.

4. Ranger K. Parthasarathi Ayyangar, VI grade, to special duty East Salem, to carry on demarcation of Class II Panchayat areas on relief by No. 3.

28—10—1924.

57. M. R. Ry. K. Parthasarathi Ayyangar, Ranger VI grade, in charge of Salem Range, Central Salem Division, is granted leave on average salary for 2 months from date of relief by Supernumerary Ranger S. Nageswara Ayyar who will hold charge of the Range until relieved by Ranger T. D. Raja Bhadar Mudaliyar, posted to this Range in this office Service Order No. 72, dated 17—10—1924.

23—10—1924.

58. M. R. Ry., M. S. Krishnaswami Ayyar, Supernumerary Ranger is granted leave on average pay on medical certificate for one month from 8—10—1924.

2—11—1924.

59. Consequent on the transfer of Ranger T. D. Ponniah in charge of Denkanikota Range to the Forest Engineering Branch, the following postings are ordered:—

1. Ranger R. Manikkam Pillai, III grade in charge of Dharma-puri Range, is posted to the charge of Denkanikota Range on relief by No. 2.

2. Supernumerary Ranger T. Perumal Goundan, West Vellore Division, is posted to the charge of Dharmapuri Range. To join expeditiously and relieve No. 1.

3. Ranger P. Sithapathi Ayyar, V grade, working in Denkanikota Range, will relieve Ranger T. D. Ponniah and remain in charge until he is relieved by No. 1.

7—11—1924.

60. Extension of leave on average pay for 16 days is granted to S. Ramalingam Aiyar, Supernumerary Ranger on Rs. 65 in continuation of this office Service Order No. 270-24, dated 10-10-1924 under the same condition as before.

6—11—1924.

61. Ranger M. Muthuswami Ayyar, III grade, now in charge of Shevaroy's West Range, is transferred to Salem Range Central Salem Division.

2. Supernumerary Ranger, S. Nageswara Ayyar, now in charge of Salem Range, is posted to the charge of Shevaroy's West Range, Central Salem Division.

3. Ranger T. D. Rajabhadar Mudaliar, VI grade, is transferred to East Salem Division for special duty on relief at Anchetti *direct*. This cancels paragraph 3 of this Office Service Order No. 72 of 1924, dated 17-10-1924.

8-11-1924.

62. M. R. Ry. K. R. Subramaniam, Ranger VII grade, East Salem Division, is granted leave on average salary on medical certificate for 3 months from 3-11-1924.

12-11-1924

63. S. V. Sibgatullahi, Ranger VI grade Santhavasal Range, is granted leave on average pay for 7 days from 8-11-1924 to 14-11-1924, both days inclusive.

14-11-1924.

64. S. V. Sibgatullahi, Ranger VI grade, Santhavasal Range is granted an extension of leave on average pay for 3 days from 15-11-1924. to 17-11-1924. in continuation of the leave sanctioned in this office S. O. No. 268-24 dated 5-11-1924.

17-11-1924.

65. In cancellation of para 2 of this office S. O. No. 78 of 1924 dated 6-11-1924. the following postings of Rangers are ordered:
1. Ranger T. D. Rajabhadar Mudaliar VI grade is posted to the charge of Dharmapuri range, North Salem Division.

2. Supernumerary Ranger T. Perumal Gounden is transferred to East Salem Division to complete demarcation etc. of panchayat areas and fuel and manure leaf coupes in Kallakurichi Range.

Fifth Circle.

6-9-1924.

66. The leave granted to M. R. Ry., M. Gulab Singh, Ranger VI Grade South Coimbatore in this Office S. O. No. 52/24, dated 29th May 1924 is further extended by 3 months and the period of absence will be treated as extraordinary leave under Fundamental Rule 85 (a).

23-9-1924.

67. In modification of this office S. O. No. 68/1924, dated 8th July 1924, M. R. Ry., C. P. Garudachella Mudaliar, Ranger II grade, is granted leave on average pay without medical certificate from 21st June 1924 to 29th August 1924, and that with Medical certificate from 30th August 1924 to 20th February 1925 and that on half average pay from 21st February 1925 to 20th October 1926.

25-9-1924.

68. The leave on half average pay granted to M. R. Ry., Ramaswamy Ayyar, Ranger VI grade in this office S. O. No. 76 of 24, dated 23rd July 1924, is further extended by one month.

5-10-1924.

69. Mr. L. J. Taylor, Ranger II is transferred from Tinnevely to Madura to hold charge of Natham Range in relief of Mr. A.B. Fenn, Ranger V grade.

1-11-1924.

70. M. R. Ry., A. K. Anantharama Ayyar, Ranger VII grade, is granted leave on average pay from 20th October 1924 to 6th December 1924 (both days inclusive).

15—11—1924.

71. The period of absence of M. R. Ry. S. Venkataswamy Naidu, Ranger V Grade, from 28th August 1924 to 1st October 1924, will be treated as leave on average pay on medical certificate.

16—11—1924.

72. M. R. Ry. K. Venkataramana Rao, Ranger V Grade, in charge of Tunacadavu Range, South Coimbatore District, is granted leave on average pay for 2 months from 3rd January 1925 with permission to prefix the Xmas holidays.

23—11—1924.

73. Under Section 52 of the Madras Forest Code the resignation tendered by M. R. Ry. M. Gulab singh Ranger VI Grade is accepted with effect from the date of his order.

Sixth Circle

74. 1. Mr. W. S. Fernandez, Ranger IV grade, transferred to this Circle in Chief Conservator's Reference No. 4110-24-B. 4-5, dated 6th September 1924, to the charge of the Beltangadi Range in the South Mangalore Division.

2. Mr. K. P. Benjamin, Ranger II Grade, transferred to this Circle in Chief Conservator's reference No. 4110-24-B. 4-5 dated 6th September 1924, to the charge of the Shankaranarayana Range in the North Mangalore Division.

11—9—1924.

75. Mr. S. F. Lobo, Ranger VII grade from the Palghat Division to the charge of the Mysore depot (from 1st October 1924)

13—9—1924.

76. 1. Mr. W. S. Fernandez, Ranger IV grade, on the expiry of his leave, to the charge of Puttur Range in the South Mangalore

Division, vice M. R. Ry. V. S. Subrahmaniam Ayyar applied for leave.

2. Mr. K. P. Benjamin, Ranger II grade, to the charge of the Beltangadi Range in the South Mangalore Division.

13—9—1924.

77. M. R. Ry., V. S. Subrahmaniam Ayyar, Ranger II grade, in charge of Puttur Range, South Mangalore Division, is granted leave on average pay for 2 months from date of relief subject to a report from the District Forest Officer, South Mangalore, regarding the Ranger's eligibility for the leave.

23—9—1924.

78. M. R. Ry. M. N. Raman Pillai, Ranger, IV Grade, Wynad Division, is granted leave on average pay for 15 days from 17th August 1924 and leave on average pay on medical certificate for 2 months in continuation thereof.

3—10—1924.

79. 1. M. R. Ry. C. Karunakara Menon, Ranger V grade, who is due back from leave on 7th October 1924, to the charge of Shankaranarayana Range, North Mangalore Division

2. Supernumerary Ranger P. Madhavan Nair in charge of Shankaranarayana Range to Palghat for regeneration duty at Sappal.

3—10—1924.

80. The leave on average pay for 2 months granted to M. R. Ry. V. S. Subrahmania Ayyar, Ranger II grade in this office S. O. No. 71 dated 18-9-1924, will be modified as follows:—

Leave on average pay for 1 month and 20 days and on half average pay for the remaining period from 25th September 1924.

19—10—1924.

81. The leave on average pay on medical certificate for 3 months, from 7th July 1924, granted to Ranger C. Karunakara Menon, in this office S. O. No. 47 of 1924 dated 20th June 1924 is extended by 2 months.

26—10—1924.

82. M. R. Ry. K. R. Krishnan Nair, Ranger III grade is, on the close of the Vernacular Training School at Nilambur, posted to the Palghat Range.

26—10—1924.

83. M. R. Ry. M. N. Raman Pillai, Ranger, IV grade is, on the expiry of his leave, posted to the Shankaranarayana Range, North Mangalore division.

(This cancels the posting of M. R. Ry. C. Karunakara Menon ordered in Service Order No. 76-24 dated 8-10-1924)

26—10—1924.

84. Mr. J. A. Aranha, Ranger I grade, is granted leave on average pay for 2 months and 9 days in continuation thereof with effect from date of relief by Ranger C. Karunakara Menon who is due back from leave on 7-12-1924.

28—10—1924.

85. Mr. K. P. Benjamin, Ranger II grade is posted to the charge of the Octacamund Range vice M. R. Ry. A. Swamikutty transferred for duty under the Forest Utilization Officer.

This office S. O. No. 66 of 1924 dated 10th September 24 posting Mr. Benjamin to the charge of the Belthangadi Range is cancelled.

8—11—1924.

86. M. R. Ry. C. Karunakara Menon, Ranger V grade, who is due back from leave on 7th December 1924 to the charge of the Kasaragode Range vice Ranger J. A. Aranha granted leave.

12—1—1924.

87. 1. M. R. Ry. S. Chidambara Ayyar, Ranger V grade, transferred from the III to the VI Circle in Chief Conservator's Reference No. 6733 B. 4-24-14 dated 31st October 1924, to the charge of the Mannarghat Range, Palghat Division.

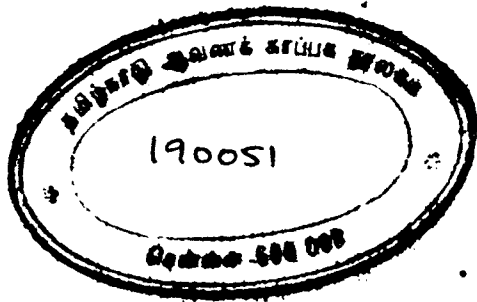
2. M. R. Ry. B. Sambamurthi Ayyar, Ranger IV grade, on relief by No. 1 to the charge of the Bolampatti Range. To join immediately.

3. M. R. Ry. P. Kannan, Ranger VII grade, is, on transfer by No. 2, under the orders of the Chief Conservator of Forests at once to report himself for duty to the Logging Engineer at Mangalore.

4. Supernumerary Ranger P. Sankunni Nair, working as Assistant Ranger in the Nilambur Division, is under the orders of the Chief Conservator of Forests posted to do duty under the Logging Engineer at Mangalore. He is to be relieved at once.
5. Mr. A. Joseph, Ranger VI grade, transferred from the II to this Circle in chief Conservator's Ref. No. 6733 B. 4-24 1914. dated 31st Octr. 1924, to the Nilambur Division as Assistant Ranger.

14-14-1924.

88. M. R. Ry. A. Nicholas, Ranger III grade, on return from leave on 9th December 1924, to the charge of the Beypore Depot, Nilambur Division.



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