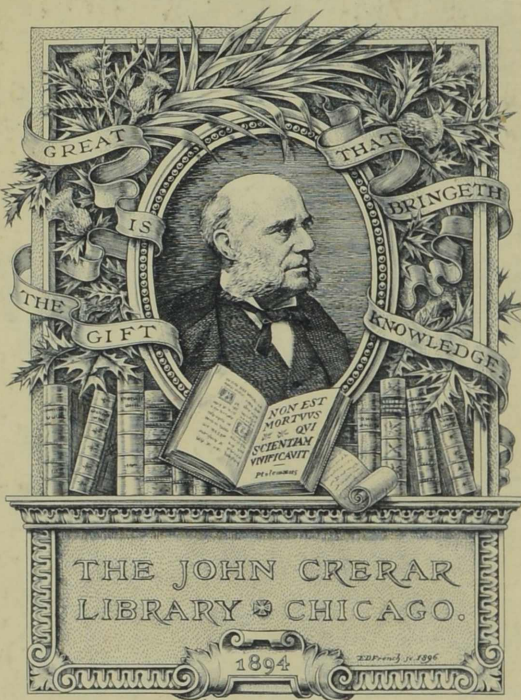


CEYLON
TEA PLANTERS'
NOTE BOOK.

FOURTH EDITION.

BY
H. K. Rutherford
AND
John Hines

The "Empire" Typewriter.



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CEYLON
TEA PLANTERS'
NOTE BOOK

OF
USEFUL MEMORANDA.

FOURTH EDITION.

BY
HENRY K. RUTHERFORD
AND
JOHN HILL.

Colombo:
"TIMES OF CEYLON" PRESS.

1902-3



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PREFACE.

TO FIRST EDITION.

ALTHOUGH many excellent works have been published for the guidance of Tea Planters in this Colony, it has always been felt that no handy note-book was available for easy reference, concisely compiled, and unencumbered with irrelevant matter.

Persuaded by a few friends that such a note-book would supply a want if I published the results I had arrived at from my own experience, together with notes and information collected from other sources, I have ventured to lay this Note-Book before the Ceylon Tea Planter, and I do so with the hope that it may be found useful to him in his every-day work.

In a book such as this is there must necessarily be, in the compilation, a large amount of matter other than original. It therefore affords me much pleasure to acknowledge my indebtedness to many previous authors on Tea planting and also to those Planters who have kindly assisted me with much useful information. There will be found a number of original tables and figures not previously published, and which, it is thought, will add greatly to the usefulness of the book.

Should the first issue of the work meet with success, it is intended to publish a second edition, bringing all information closer up to date, and for this purpose the author would feel greatly indebted to Planters or others supplying him with information or hints for future issue.

NUWARA ELIYA, CEYLON,

31st March, 1887.

H. K. RUTHERFORD,

TO THIRD EDITION.

The second edition of this book having been sold out, and there still being a demand for the little work, it is hoped that the present edition, which has, as far as possible, been brought up to date, will prove useful to those requiring its assistance.

TO FOURTH EDITION.

The changes that have taken place in the Ceylon Tea industry since the third edition of this note-book was published in 1892 together with the fact that it has been for many years out of print, are perhaps sufficient reasons

for offering this fourth edition to Ceylon Planters and others who may have found former issues useful for reference. The Compilers desire to express their thanks to all those who have supplied information and aided them in their work.

H. K. RUTHERFORD.
JOHN HILL.

Opinions of the Press and Leading Tea Planters on the First Three Editions.

(Extracts from Letters.)

“The ‘Note-Book’ is very well got up, and has an immense amount of useful matter in it.”

T. C. OWEN.

“‘Rutherford’s Note-Book’ is indeed a most useful work, full, from beginning to end, of notes indispensable to the Tea Planter. Its composition shows the greatest care and thought, and no Planter should be without so valuable a book of reference.”

C. SPEARMAN ARMSTRONG.

“I have already found the one you sent me most useful. The information being thoroughly reliable is of so varied and practical a nature that one is never at a loss in applying to it on any subject affecting our Tea Industry. The compilation is certainly one that no Ceylon Planter should be without.”

GEO. GREIG.

“I have looked over ‘Rutherford’s Tea Planters’ Note-Book.’ It contains a wonderful quantity of practical and scientific information about tea work, which could only have been collected by one who has had a large practical experience of the working of tea estates and of building works in Ceylon. It will, I have no doubt, much assist Tea estate Managers in their work, and should, if carefully read, cheapen the production of Tea in Ceylon.”

G. A. TALBOT.

“‘Rutherford’s Ceylon Tea Planters’ Note-Book’ has been carefully perused by me, and it is undoubtedly a thoroughly reliable and comprehensive digest of useful information and the results of the experience of practical men. The book is replete with original and useful statistics and facts collected into a compact form by Mr. Rutherford, who has been at great pains to have the information *correctly*, while succinctly and intelligibly, stated.”

ARTHUR E. SCOVELL.

"Rutherford's book to hand, and I am much pleased with it; there is a lot of very useful information contained in it."

C. A. HAY.

"In common truth I suppose nearly every Tea Planter has one of your Note-Books. Allow me to add my testimony in saying that it has been of the utmost service to me. and is, I think, the best value for eight rupees I ever secured as regards the Tea business."

J. F. W. GORE.

"Rutherford's Tea Note-Book' has been published since our last, and is the most useful work on the subject that has been placed before those interested in Ceylon Tea."—*Forbes and Walker's Fortnightly Circular*.

"We have reviewed several books upon Tea lately, and we now have before us another publication, which is better than the rest,—the 'Ceylon Tea Planters' Note-Book,' by Mr. Rutherford (Colombo. *Times of Ceylon* Γ. S. S.), a well-known planter. This little book is excellently printed and bound, it contains a great quantity of digested information, and is altogether a credit to its authors and publishers. The only fault is that the pocket book is not furnished with a pencil, otherwise we have no fault to find with its outward appearance. As to the contents, though primarily intended for use in Ceylon, Tea Planters elsewhere will find it worth consulting. The various estimates and tables given are for the most part original, or revised by actual working. Very little space is devoted to recommendations about manufacture or cultivation, which is just as well, for these are matters on which advice is not wanted. The information given is generally on such small matters as a busy man cannot carry in his head, and cannot afford to waste his time looking through half-a-dozen books for. The author fairly claims for his book that it is 'available for easy reference, concisely compiled, and unencumbered by irrelevant matter'."—*Madras Mail*.

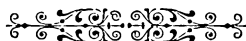
"We have received a copy of 'Rutherford's Ceylon Tea Planters' Note-Book.' The Note-Book, which is full of useful information concerning Tea, is of convenient size for the pocket, and should prove of great service to Tea Planters."—*Home and Colonial Mail*.

"In our last issue we referred to the publication of 'Rutherford's Ceylon Tea Planters' Note-Book.' So much has already been said in its favor that it merely remains for us to assure Planters and others connected with the Tea industry that it is by far the best book of reference yet published. To our friends in South India and Java we would strongly recommend this guide,

which will be found full of the most valuable suggestions, reliable information, and useful statistics. It has been compiled with much care, and is presented in a compact and easy form. Planters, Brokers, and Merchants can at all times easily decide any question of doubt by a reference to the Tea Planters' Companion,"—*Ceylon Advertiser*.

"In this handy little book, which can be carried about in the pocket, Mr. H. K. Rutherford has contrived to store a surprising amount of knowledge referring to tea and all that concerns it. There is not a single point of interest so far as we can see. omitted. Whether it be acreage, analysis, belting, boilers, labourers, crops (past and present). tea dryers, or any of the many points upon which the Tea Planter or Merchant requires to refresh his memory, there are facts at his fingers' ends in this wonderful little book. The index shows that there are nearly 250 headings of subjects referred to. It is not only essential to Ceylon Tea planters, but there is so much about the industry generally that planters in India and elsewhere will find it of great service. It is published at the *Times of Ceylon* Office, Colombo."—*Home and Colonial Mail*.

"A reward might well be offered to the man who looks and fails to find in this Planters' Note-Book anything however remotely connected with tea,"—*Ceylon Observer*.



***COST OF BRINGING AN ESTATE
INTO BEARING,***

PRICES OF ESTATE REQUISITES 1902.

			NETT.	
			Rs.	Cts.
Alavangoes, 3½ ft. ...	...	... per doz. at	23	00
Asbestos, non-conducting composition for lagging				
Boilers, Furnaces, Steam Pipes, &c.	...	... per cwt. at	16	65
Asphalte, superior, in casks about 6½ cwts.	...	... per ton at	85	00
Axes felling, round faced, special quality	...	... per doz. at	22	00
Bags, Coir for Wire Shoots	...	... Rs. 1·05 to	1	40
Brushes, bass hand ...	...	... Rs. 1·00 to	1	60
Candles, Rangoon ...	..	. 25 lbs. box at	10	00
Canister Metal, 2 oz. (requires no Solder)		per 2 cwt. case at	52	00
Cans, watering 2 gallons each Rs. 4·00		3 gallons each at	4	75
Catties, socket ...	...	per doz. Rs. 15·00 to	22	00
Cement, Portland ...	...	.. at	11	50
Cloth, linen tea firing 36 in. wide ...	...	... per yard at	0	50
Detonators ...	...	per box of 100 at	3	00
Dynamite, per half case 25 lbs. Rs. 38·00		per case of 50 lbs. at	75	00
Five Minute Sand Glass	...	... at	1	80
Forks, 3 pronged 10 inches	..	... per doz. at	38	50
Fuse, for dynamite ...	...	per coil of 2½ ft. at	0	35
Galvanized Wire Netting, 3 ft. × ½ in. mesh	...	... per yard at	0	80
Do do 3 ft. × ¾ in. "	..	... ,, at	0	50
Hammers, stone breakers, 1½, 2, 2½ lbs.	...	... per lb. at	0	63
Do Mason 4—6 lbs.	...	... ,, at	0	40
Do Sledge, double faced, solid steel	..	... ,, at	0	33
Hoop Iron, ½ in. × 25 W. G.	...	... per cwt. at	12	00
Jumpers, made to any size	...	... per lb. at	0	50
Jute Hessian heavy 40 in. and 45 in.		per yard cts. 13 to	0	14
Knives, Pruning ...	...	per doz. Rs. 12 to	21	00

				NETT.	
				Rs.	Cts.
Lamps, hand, wall or table. with reflectors	...	at		3	60
Lanterns, (candle) . .	...	at		2	50
Lining Machines	...	at		15	00
Lining Rope, tarred English	...	per 100 yards each	at	6	00
Mamoties, 7 in. × 9 in.	...	per doz.	at	11	00
Nail Pullers	...	each	at	8	00
Nails. Tea Chest. 1 in., 1½ in., and 1½ in.	...	per cwt.	at	12	50
Oil, Cylinder	...	per gallon		2	50
Oil, Linseed	...	at		3	25
Pickaxes	...	per doz.	at	18	00
Putty, best Linseed	...	per cwt.	at	15	75
Saws, cross cut, 4 ft.	...	at		7	00
Scissors, tea lead 8 in.	...	per pair		2	00
Scoops, tea	...	54 cts to (each)		2	70
Sharpening Stones	...	at		3	00
Sieves Tea, (round) all sizes	...	at		6	00
Solder	...	per lb.		0	50
Soldering Bolts, according to size	...	at Rs. 1.35 to		1	80
Soldering Fluid	...	per bottle		1	00
Spring Balance, Salter's Pocket	...	weighing to 50 lbs. each	at	1	00
Stencil Brushes	...	each	at	0	80
Stencil Combination, 2 in.	..	at		4	70
Stencil Ink	...	per cake	at	1	25
Tar. English Coal	...	in barrels of about 40 gallons each	at	25	00
Tallow, best Russian	...	per keg of 14 lbs.	at	5	37
Tasting Cups and Pots	...	per doz.	at	11	00
Tasting. Scales mahogany	...	each	at	9	00
Tea House Thermometers	...	each Rs. 1.80 to		2	25

				NETT.	
				Rs.	Cts
Tea Lead	...	...	... per cwt. at	17	00
Tin, Block	...	...	... per lb. at	0	95
Tin Tacks	...	...	... " „ at	0	30
Twine, Calcutta	...	..	... per cwt. at	45	00
Waste, Cotton	...	...	No. 1 quality at	25	00
Wedges, Solid Steel, English manufacture for					
splitting firewood	...	...	... per lb. at	0	40
Weighing Machine, Avery's No. 112			weighing 10 cwts. at	190	00
Do	do	No. 132	„ 4 „ at	90	00
Weighing Machine, Union Scale	...		weighing to 250 lbs. at	50	00
Whale Line, for wire shoots	...		per coil of 240 fathoms at	45	00
Wire Gauze up to 20 mesh	...		... per sq. ft. at	0	45
Do	above	„	per sq. ft. 60 cts. to	0	70
Zinc Sheets (for bins)	...	...	... per cwt. at	26	00



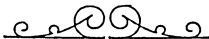
ESTIMATE OF COST OF BRINGING INTO BEARING 200
ACRES OF LOW COUNTRY LAND OF AVERAGE
QUALITY WITH 100 ACRES OF FOREST
RESERVE.—H. K. R.

Cost of 300 acres Forest at Rs. 30·00 per acre...		Rs	9,000
FIRST YEAR.	P. acre.		
Felling and Clearing 200 acres	... at Rs. 13·00	2,600	
Lining, Holing, Filling, Planting, and Supplying (4 ft. × 3½ ft.)	.. at ,, 22·00	4,400	
Seed and Nurseries	... at ,, 30·00	6,000	
Roads and Drains	. at ,, 13·00	2,600	
Weeding say 15 months at Rs. 1·50	.. at ,, 22·50	4,500	
Lines, Temporary	... at ,, 5·00	1,000	
Contingencies, Tools, Survey, Medicines, &c.	at ,, 6·00	1,200	
Superintendence	.. at ,, 12·50	2,500	
	124·00		24,800
SECOND YEAR,		Rs.	33,800
Superintendence	... ..	2,500	
Contingencies, Tools, Medicines, Taxes, Stationery, &c.	...	1,000	
Supplying	... ..	800	
Up-keep of Roads and Drains	...	800	
Weeding, at Rs 1·00 per acre	...	2,400	
Permanent Lines	... ..	1,500	
Bungalow and Furniture	... ..	2,500	
Topping, at Rs. 2·50 per acre	... ..	500	
			12,000
	Carried over Rs		45,800

THIRD YEAR.		
	Brought forward Rs.	45,800
Superintendence, Contingencies, General		
Charges, &c. ...	per acre Rs. 22	4,400
Cultivation and Tools ...	... „ „ 23	5,600
Tea Factory and Machinery ...	... ..	19,000
Plucking, Manufacturing, and Placing f. o. b.		
40,000 lbs. Tea at 18 cts. per lb. (200 lbs. per acre) ...		7,200
	Rs.	36,200
Example of profits, with tea at 6d. net.		
By 40,000 lbs. netting say 6d. per lb. at 1/4d. exch.=30 cts.		14,400
		21,800
	At end of 3rd year...	67,600
FOURTH YEAR.		
Expenditure on 200 acres at Rs. 50.00 per acre	Rs.	10,000
Allow for Extra Expenditure on Lines, Bungalows,		
Withering Sheds, &c. ...	... ..	5,000
Plucking, Manufacturing, and Placing f. o. b.		
70,000 lbs. Tea at 18 cts. per lb. (350 lbs. per acre) ..		12,600
		27,600
By 70,000 lbs. Tea at 36 cts. ...	..	25,200
		2,400
Total Capital Outlay=Rs. 350 per acre without interest		
at end of 4th year		70,000
FIFTH YEAR.		
Cost of producing Crop of 500 lbs per acre		
= 100,000 lbs. ... ..	... at 26 cts. ...	
Netting in Colombo ..	... at 36 „ ...	
100,000 lbs. ... ..	... at 10 „ ...	
	Profit...	10,000 = 14 %
SIXTH YEAR.		
Crop at 550 lbs. per acre=110,000 lbs. at 10 cts. profit ...		11,000 = 15 %

Example of Profits with Tea at 5d. net.		
Brought forward (see previous page) Rs.	36,200	45,800
By 40,000 lbs. netting 5d. per lb. at 1/4½d. exch. = 36 cts...	12,000	24,200
		70,000
At end of 3rd year...		
FOURTH YEAR.		
Expenditure in Cultivation, Buildings and		
Manufacture as above	27,600	
By 70,000 lbs. at 30 c nts ...	21,000	6,600
Total Capital Outlay without interest at end		
of 4th year = Rs. 383 per acre		76,600
FIFTH YEAR.		
Crop 100,000 lbs. costing 26 cts. per lb.		
Netting <u>30</u>		
4 cts. per lb. profit	4,000	= 5¼ %
SIXTH YEAR.		
Crop 110,000 lbs. at 4 cts. per lb. profit	4,400	= 5¼ %

It may safely be assumed from these figures that unless Low Country Teas are likely to command in future years not less than 6d. per lb. net, no planter would risk opening out new Estates.



CULTIVATION OF TEA LAND AND COST OF OPENING.

Planting 4 ft. by 3½ ft. say 3,000 plants to an acre.

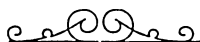
			FROM	TO.
			Rs.	Rs.
Felling and Clearing	...	... per acre	9	16
Lining, including pegs	...	... do	3½	4½
Holing	...	... do	9	11
Filling in	...	... do	3½	4
Planting and Supplying	...	.. do	5	10
Shading	...	... do	4	7
Roading	...	.. do	6	8
Draining	...	... do	8	11
Weeding	...	... do	10	14
Topping	...	... do	1½	2½
Pruning	...	... do	5	10
Collar pruning	...	... do	4	5
Roads and Drains up-keep	...	... do	1	2
Tea plants	...	... do	20	30
Tea stumps	...	... do	30	45
Lines, Temporary thatched per room	...	... ..	10	15
Do Permanent shingle roof	...	.. ..	50	60
Do do iron roof	...	... ..	90	100
Do do tiles (on estate)	...	... ..	65	90



LABOUR.

AVERAGE WORK OF A COOLY PER DAY.

		FROM	TO	
Holing	...	100	120	18 in × 12 in.
Filling	...	300	350	
Cutting pegs	...	800	1,000	
Putting in pegs	...	500	700	
Planting	...	200	250	
Drains	...	feet 50	60	18 in × 15 in
Roads	...	35	50	6 ft. in the solid
Forking	...	160	200	trees
Topping	..	500	600	trees
Pruning	...	180	300	trees
Collar pruning	...	—	280	trees



DISTANCES OF TREES.

NUMBER PER ACRE.

$$\left. \begin{array}{l} 4,840 \text{ sq. yards} \\ 43,560 \text{ sq. feet} \end{array} \right\} = 1 \text{ acre.}$$

Feet.	Surface sq. feet.	Trees per acre.
3 × 3	9	4,840
3½ × 3	10½	4,150
3½ × 3½	12¼	3,556
4 × 3	12	3,630
4 × 3½	14	3,111
4 × 4	16	2,722
4½ × 4	18	2,420
5 × 4	20	2,178
5 × 5	25	1,742
6 × 6	36	1,210
7 × 7	49	807
8 × 8	64	680
9 × 9	81	537
10 × 10	100	435
15 × 15	225	193
20 × 20	400	109
25 × 25	625	70
30 × 30	900	48
35 × 35	1,225	35
40 × 40	1,600	27



DRAINS.

Distance apart. Feet.		Linear feet per acre		Cost per acre.
30	...	1,452	...	10·16
35	...	1,244	...	8·70
40	...	1,080	...	7·56
45	...	968	...	6·77
50	...	871	...	6·09
55	...	792	...	5·54
60	...	726	...	5·08
65	...	670	...	4·69
70	...	622	...	4·35

Cost is worked out on the basis of a cooly cutting 50 feet; and the check roll average being 35 cents. This is for surface acreage only, a proportionate addition must be made on steep lands.



COST OF TEA.

Average cost per lb. of producing Tea based on actual cost of 8 millions of lbs., the output of 18 Estates, during the years 1899—1900.

GENERAL CHARGES.	Cents.	Cents.
Salaries, commissions & furlough.....	3·78	
Allowances	·23	
Contingencies	·62	
		4·63
TEA CULTIVATION.		
Roads and Drains	·26	
Weeding.....	2·42	
Pruning.....	·70	
Supplying	·04	
Manuring	2·28	
Grass and Cattle.	·29	
Fences and Boundaries.....	·02	
Tools	·06	
Up-keep of Buildings.....	·78	
Diseases and Remedies.....	·11	
		6·96
TEA MANUFACTURE.		
Plucking, including Baskets.....	8·86	
Firewood.....	·88	
Tea House Labour.....	·84	
Packing Materials.....	2·56	
Transport to Colombo.....	·82	
Shipping Charges.....	·52	
Tea House Sundries	·08	
Machinery up-keep.....	·41	
		14·97
	cents...	26·56

F.O.B. Colombo @ 1s. 4d, Exchange = 4½d per lb.

APPROXIMATE COST OF PRODUCING TEA PER LB. ON
AN ESTATE OF 400 ACRES AT VARYING YIELDS
FROM 250 LBS. TO 600 LBS. PER ACRE.

Yield per acre. lbs.	250	300	350	400	450	500	550	600
Salaries, Medicines, General Charges and Contingencies	9.00	8.10	7.30	6.40	5.60	4.70	4.10	4.00
Cultivation, exclusive of Manuring ...	8.00	7.20	6.50	5.70	4.90	4.15	4.05	4.00
Plucking ..	12.50	11.80	11.00	10.20	9.60	8.90	8.45	8.00
Manufacture f. o. b.	8.00	7.60	7.30	7.00	6.60	6.25	6.10	6.00
Upkeep of Factory and Machinery ...	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Cost in Cents per lb. of Tea ...	38.50	35.70	33.10	30.30	27.70	25.00	24.00	23.00

On Estates of larger acreages with Factories purchasing leaf and manufacturing Tea for others on a large scale, tea can be put f. o. b Colombo at 21 cents per lb.



STATEMENT SHEWING APPORTIONMENT OF CHARGES
OF COST OF PRODUCING A CEYLON TEA CROP
OF 140 MILLION LBS. OF TEA F. O. B.,
COLOMBO.—H. K. R.

ESTABLISHMENT.	£.	Percentages.
Salaries ...	345,333	13·97
Allowances ...	23,333	·91
Contingencies ...	60,667	2·45
	£429,333	17·36
CULTIVATION.		
Roads and Drains ...	28,000	1·13
Weeding ...	242,667	9·81
Pruning ..	79,333	3·21
Supplying ...	9,333	·38
Manuring ...	112,000	4·52
Grass and Cattle ...	28,000	1·13
Fences and Boundaries ...	1,867	·08
Tools ...	10,267	·41
Removing Diseases ...	11,200	·45
Forest Reserves ..	9,333	·38
	£532,000	21·50
MANUFACTURE, &c.		
Plucking and Baskets ...	849,334	31·31
Firewood and Fuel ...	93,333	3·78
Tea House Labour ..	75,600	3·05
Packing Materials ..	224,000	9·05
Transport of Tea ...	84,000	3·10
Colombo Shipping Charges ...	56,000	2·27
Tea House Sundries ..	7,466	·31
Up-keep of Machinery ...	38,267	1·54
Do Buildings ..	81,000	3·10
	£1,512,000	61·14
	£2,473,333	100·00

Cost f. o. b. Colombo = 26½ cents = 1·24d. per lb. @ 1/4d. exchange.

TABLE SHOWING PERCENTAGE OF PROFIT ON TEA PROPERTY AT VARYING CAPITALS PER ACRE, VARYING YIELDS PER ACRE, & VARYING PROFITS PER LB. OF TEA.—H. K. R.

Capital per acre.			at ½ penny per lb. profit.					at 1 penny per lb. profit					at 2 pence per lb. profit.						
Sterling.			lbs. per acre.					lbs. per acre.					lbs. per acre.						
£	s.	d.	Rs.	cts.	200	300	100	500	600	200	300	400	500	600	200	300	400	500	600
104	3	4	1470	59	·10	·60	·80	1·00	1·20	·80	1·20	1·60	2·00	2·10	1·60	2·40	3·20	4·00	4·80
98	19	2	1397	06	·42	·63	·84	1·05	1·26	·84	1·26	1·68	2·10	2·52	1·68	2·52	3·36	4·21	5·05
93	15	0	1323	53	·44	·66	·89	1·11	1·33	·89	1·33	1·77	2·22	2·66	1·77	2·66	3·55	4·41	5·33
88	10	10	1250	00	·47	·70	·94	1·17	1·41	·94	1·41	1·88	2·35	2·82	1·88	2·82	3·76	4·70	5·65
83	6	8	1176	60	·50	·75	1·00	1·25	1·50	1·00	1·50	2·00	2·50	3·00	2·00	3·00	4·00	5·00	6·00
78	2	6	1102	94	·53	·80	1·06	1·33	1·60	1·06	1·60	2·13	2·66	3·20	2·13	3·20	4·26	5·33	6·40
72	18	4	1028	45	·57	·85	1·11	1·42	1·71	1·14	1·71	2·28	2·85	3·42	2·28	3·42	4·57	5·71	6·85
67	14	2	955	88	·61	·92	1·23	1·53	1·84	1·23	1·84	2·46	3·07	3·69	2·46	3·69	4·92	6·15	7·38
62	10	0	882	37	·66	1·00	1·33	1·66	2·00	1·33	2·00	2·66	3·33	4·00	2·66	4·00	5·33	6·66	8·00
57	5	10	808	82	·72	1·09	1·45	1·81	2·18	1·45	2·18	2·90	3·63	4·36	2·90	4·36	5·81	7·27	8·72
52	1	8	735	30	·80	1·20	1·60	2·00	2·40	1·60	2·40	3·20	4·00	4·80	3·20	4·80	6·40	8·00	9·60
46	17	6	661	77	·88	1·33	1·77	2·22	2·66	1·77	2·66	3·55	4·41	5·33	3·55	5·33	7·11	8·88	10·66
41	13	4	588	25	1·00	1·50	2·00	2·50	3·00	2·00	3·00	4·00	5·00	6·00	4·00	6·00	8·00	10·00	12·00
36	9	2	511	72	1·14	1·71	2·28	2·85	3·43	2·28	3·43	4·56	5·71	6·86	4·56	6·86	9·16	11·45	13·70
31	5	0	411	18	1·33	2·00	2·66	3·33	4·00	2·66	4·00	5·33	6·66	8·00	5·33	8·00	10·66	13·33	16·00
26	0	10	367	65	1·60	2·40	3·20	4·00	4·80	3·20	4·80	6·40	8·00	9·60	6·40	9·60	12·80	16·00	19·20
20	16	8	294	11	2·00	3·00	4·00	5·00	6·00	4·00	6·00	8·00	10·00	12·00	8·00	12·00	16·00	20·00	24·00

TABLE SHOWING PERCENTAGE OF PROFIT ON TEA PROPERTY AT VARYING CAPITALS
PER ACRE, VARYING YIELDS PER ACRE, & VARYING PROFITS PER LB. OF TEA.—H, K, R.

Capital per acre.			at 3 pence per lb. profit.					at 4 pence per lb. profit.					at 5 pence per lb. profit.							
Sterling.			lbs. per acre.					lbs. per acre.					lbs. per acre.							
£.	s.	d.	Rupees.		cts.	200	300	400	500	600	200	300	400	500	600	200	300	400	500	600
			Rs.	1/5 Exch.																
104	3	4	1470	59	240	360	480	600	720	320	480	640	800	960	400	600	800	1000	1200	1500
98	19	2	1397	06	252	378	505	631	757	336	505	673	842	1010	421	631	842	1052	1263	1574
92	15	0	1323	53	266	400	533	666	800	355	533	711	888	1066	444	666	888	1111	1333	1555
88	10	10	1250	00	282	423	565	706	840	376	565	753	941	1129	470	706	941	1176	1412	1648
83	6	8	1176	50	300	450	600	750	900	400	600	800	1000	1200	500	750	1000	1250	1500	1750
78	2	6	1102	94	320	480	640	800	960	426	640	853	1066	1280	533	800	1066	1333	1600	1867
72	18	4	1028	45	342	514	685	857	1027	457	685	913	1142	1371	571	857	1142	1428	1714	2000
67	14	2	955	88	369	553	738	922	1108	492	738	984	1230	1476	615	922	1230	1538	1846	2154
62	10	0	882	37	400	600	800	1000	1200	533	800	1066	1233	1600	666	1000	1333	1666	2000	2333
57	5	10	808	82	436	654	872	1090	1318	581	872	1163	1455	1747	800	1200	1555	1818	2181	2544
52	1	8	735	30	480	720	960	1200	1440	640	960	1280	1600	1920	800	1200	1600	2000	2400	2800
46	17	6	661	77	533	800	1066	1333	1600	711	1066	1422	1777	2133	888	1333	1777	2222	2666	3111
41	13	4	588	25	600	900	1200	1500	1800	800	1200	1600	2000	2400	1000	1500	2000	2500	3000	3500
36	9	2	514	72	686	1028	1370	1713	2057	914	1370	1828	2285	2742	1145	1713	2285	2857	3428	4000
31	5	0	441	18	800	1200	1600	2000	2400	1066	1600	2133	2666	3200	1333	2000	2666	3333	4000	4667
26	0	10	367	65	960	1440	1920	2400	2880	1280	1920	2560	3200	3840	1600	2400	3200	4000	4800	5600
20	16	8	294	11	1200	1800	2400	3000	3600	1600	2400	3200	4000	4800	2000	3000	4000	5000	6000	7000

SEED AND PLANTS.

The seed of Indigenous. is generally larger than that of Hybrid or China. Seed is ripe when capsule becomes brown ; and when breaking the latter, the inner brown covering of the seed adheres to the seed and not to the capsule. To guarantee that the seed is perfectly ripe a good plan is to pick up the fallen seed.

After picking, lay the seed in the sun for half-an-hour daily until most of the capsules have split ; shell, and lay on floor of any building to dry. Do not sun after shelling. If seed is to be kept for about a fortnight, cover with dry mould ; if for longer, leave it on a dry floor thinly spread, and turn over every day. Light seed should be floated off before planting or transporting. For transporting a short distance, place in coarse gunny bags one-third filled. For long journeys, pack in boxes in layers with dry fine charcoal and loam between layers of sheets of paper, to prevent charcoal and loam running to the bottom.

The higher the jat. the less durable the seed.

Seed can either be germinated on beds of sand or laid between coir-matting. In either case the drainage should be good and the seed freely watered, Seed germinates in about a month and the seed should then be picked out daily. The higher the jat, the thinner the shell and therefore the quicker the germination.

A cooly can pick 6 to 15 lbs. of seed according to season. Cost per maund picking, husking, and packing in bags—Rs. 3 to 4.

7 maunds Seed with Capsules gives 1 maunds Clean Seed.

1 maund is equal to 30,000 seeds. Very good seed should give 80 per cent. plants.

Imported seed 1 maund	...	...	equals to plants	10,000
Local fresh do.	...	...	" "	15,000
The former will plant say	3½ acres ;	4 ft. × 4 ft.		
The latter do.	5 acres ;	1 ft. × 1 ft.		
1,000 plants bundled for transport	=	56 lbs.		

INDIGENOUS AND CHINA VARIETY OF PLANTS,

Characteristics.—Pure Indigenous, from 9 in. to 12 in. above the soil, has clean single stem. Grows and flushes quicker, after 2nd or 3rd year, than the China jât, and does not run so much to wood.

China plant is hardier than Indigenous.

Leaves of Indigenous are much larger and do not harden so rapidly as the China. The former are of a pale-green color, the latter a dull dark-green.

Quality of Indigenous tea is more pungent and rasping than the China leaf.

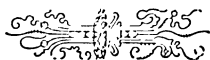
Seed.—China jât is more prolific of seed, and seed checks leaf.

Cultivation.—High cultivation will improve class of plant. On very poor soil, jât deteriorates.



TABLE SHEWING SIZE OF NURSERY REQUIRED FOR SEED AT VARIOUS DISTANCES.—Money.

Distance apart of seed in inches.	Area in square inches per seed.	Area required per maund of seed including paths.	Size of nursery for every 10 maunds.
4 in. × 4 in.	16 inches	4,000 sq. ft.	100 ft. × 100 ft.
4 in. × 3 in.	12 „	3,000 ..	300 ft. × 100 ft.
4 in. × 2 in.	8 „	2,000 ..	200 ft. × 100 ft.
3 in. × 3 in.	9 „	2,250 ..	225 ft. × 100 ft.
3 in. × 2 in.	6 ..	1,500 ..	150 ft. × 100 ft.
2 in. × 2 in.	4 ..	1,000 „	100 ft. × 100 ft.



COST OF REARING TEA PLANTS PER 1,000 ALLOWING
Rs. 2 PER 1,000 FOR NURSERIES AND
WATERING.—H. K. R.

Cost of seed per maund.	COST OF PLANTS PER 1,000 AT VARIOUS OUTTURNS.				
	6,000 to a maund.	8,000 to a maund.	10,000 to a maund.	15,000 to a maund.	20,000 to a maund.
Rs. 30	7.00	5.75	5.00	4.00	3.50
35	7.83	6.37	5.50	4.33	3.75
40	8.67	7.00	6.00	4.67	4.00
45	9.50	7.62	6.50	5.00	4.25
50	10.33	8.25	7.00	5.33	4.50
55	11.16	8.87	7.50	5.67	4.75
60	12.00	9.50	8.00	6.00	5.00
65	12.83	10.12	8.50	6.33	5.25
70	13.67	10.75	9.00	6.67	5.50
75	14.50	11.37	9.50	7.00	5.75
80	15.33	12.00	10.00	7.33	6.00
85	16.16	12.62	10.50	7.67	6.25
90	17.00	13.25	11.00	8.00	6.50
95	17.83	13.87	11.50	8.33	6.75
100	18.67	14.50	12.00	8.67	7.00
105	19.50	15.12	12.50	9.00	7.25
110	20.33	15.75	13.00	9.33	7.50
115	21.16	16.37	13.50	9.67	7.75
120	22.00	17.00	14.00	10.00	8.00
125	22.83	17.62	14.50	10.33	8.25
130	23.67	18.25	15.00	10.67	8.50

INDIAN TEA SEED.—(Assam.)

PRO-FORMA ACCOUNT SALES.

	Rs.	Δ	P.	Rs.	A.	P.
150 half-chests Hybrid Tea Seed weighing each 40 lbs. = 75 maunds. at Rs. 50 ...	3,750	0	0			
Packing and Despatching at Rs. 2/8 ...	375	0	0	1,125	0	0
Charges.						
To Freight from Assam per steamer ...	381	8	0			
To Landing. Storing, Coolie Hire, Carriage, Town Dues. Repairing. Gunny-packing, Hooping, Marking, and Shipping ...	225	0	0			
Bills of Lading, Stamps, Postage, & Petties	2	8	0			
Cost of Telegram ...	1	14	0			
Messrs. ————— s Testing Fees ...	16	0	0			
Marine Insurance ..	24	7	6			
Freight to Colombo ...	114	12	0			
Commission on Rs. 4,891 1a. 6p. at 2½ %	122	4	6			
Bills of Exchange and Stamp ...	4	12	0			
Discount ¼ per cent ..	37	14	9			
				931	0	9
Amount of Indian account ..	Rs. 5,056	cts 05	Rs.	5,056	0	9
Ceylon Charges.						
Landing. Harbour Dues Cart. Cooly Hire, and Agency ..	50	58				
Total Rs...	5,106	63				

Total charges including cost of packages = Rs. 18 per maund.

Cost at Garden 50 .

.. , Colombo .. 68 per maund,

NAMES OF SEED GARDENS.

CEYLON.

BARRINGTON

BELONGALLA

BLACKWATER

CHAPELTON

DARTRY

DENIYANILLA

EAST HOLYROOD

HOPEWELL

KANAPEDIWATTEE

LEANGAWELLA

MAHAWILA

MASSENA

MOUSAGALLA

ROOKATENNE



ROOKATENNE ESTATE.

TEA SEED

OF

Finest Indigenous Fat

FROM

SELECTED SEED BEARERS ONLY.

All of which can show a leaf of from
7 to 10 inches.

SUITABLE FOR ANY CLIMATE OR ELEVATION
MATURE SEED ONLY GATHERED.

FOR PRICES APPLY :

SUPERINTENDENT,

ROOKATENNE ESTATE,

BANDARAWELA,

CEYLON.

THE
TIMES
OF
CEYLON.

THE
LEADING
PAPER
OF THE ISLAND.

MANURING.

ANALYSIS OF CEYLON SOILS,
Table showing the average Composition of Soils on various Estates.
(*BAMBER'S SOIL REPORT.*)

ESTATES.	Rainfall.	Elevation.	Prices.	SOIL CONSTITUENTS.						MECHANICAL COMPOSITION.				Reten- tive- ness.	Yield PER Acre PER Hrs.	
				Organic Matter.	Nitro- gen.	Phos- phoric Acid	Potash.	Limc.	Oxide of Iron.	Lower Oxide of Iron.	90	60	30			Sand.
Springwood	130	2,500	6d.	6.17	.084	.073	.328	.126	2.803	nil	9.10	12.95	10.75	67.20	18.00	450
St. Leonards-on Sea	100	300	6d.	7.90	.128	.036	.080	.104	4.365	trace	17.00	31.00	17.00	35.00	13.50	400
Doonvale	100	400	6d.	8.24	.079	.024	.111	.165	8.239	nil	18.00	30.00	15.00	37.00	19.50	350
Bandarapola	125	1,600	6d.	9.13	.115	.169	.046	.072	11.717	nil	13.00	26.00	12.80	18.20	20.50	320
Attabogie	125	3,000	6d.	7.87	.158	.045	.313	.276	8.415	nil	14.65	24.10	11.50	46.75	11.00	500
Pantiya	140	400	6d.	7.20	.131	.010	.103	.165	14.546	trace	10.50	25.50	16.00	18.00	31.00	480
Duncedin	180	100	6d.	14.45	.090	.052	.039	.083	24.602	trace	12.00	23.50	13.80	50.70	16.00	450
Pen-y-lan	175	3,000	6d.	11.55	.161	.123	.180	.143	11.906	trace	16.50	24.00	12.50	17.90	24.00	350
North Pundaluoya	130	1,000	6d.	9.37	.174	.075	.224	.290	7.215	nil	12.33	21.81	12.33	53.50	18.00	400
Elkaduna	100	2,000	7	9.93	.146	.088	.178	.112	9.924	trace	12.50	28.20	16.30	13.00	31.25	700
Galaha	125	3,000	7	7.13	.166	.062	.086	.199	7.241	trace	13.00	29.50	11.25	16.25	13.00	600
Carolina	180	3,500	7	12.27	.156	.075	.064	.126	9.150	trace	6.00	15.20	13.70	64.50	23.00	500
Laxapana	125	4,000	7d.	9.63	.205	.088	.170	.608	8.677	trace	8.50	14.00	7.50	70.00	16.00	600
Weoyna	150	1,000	7d.	11.66	.156	.026	.047	.008	17.877	trace	9.00	21.00	10.50	59.50	21.80	450
Elston	150	400	7d.	11.57	.157	.028	.064	.090	20.628	trace	16.20	28.60	13.00	12.20	31.75	350
El Teb	90	4,000	7d.	5.86	.113	.018	.116	.339	8.284	nil	6.25	15.60	9.10	63.75	18.00	350
Darrawella	120	4,000	8	12.44	.221	.039	.056	.140	7.607	trace	19.75	25.50	13.50	11.25	28.50	550
Glen Alpin	75	4,000	8d.	9.93	.107	.090	.114	.120	7.457	trace	17.70	31.00	13.80	37.50	22.30	350
Lunugalla	120	4,500	8d.	6.11	.116	.102	.139	.062	10.715	fair	5.85	13.50	9.50	71.35	31.00	600
Drayton	125	3,500	8d.	13.82	.186	.115	.104	.012	10.631	much	11.30	24.10	15.00	49.60	38.30	300
Loolecondera	150	1,000	8d.	12.73	.236	.031	.239	.385	11.113	fair	16.00	27.70	13.80	12.50	16.75	550
Kandapolla	191	6,100	9d.	14.32	.331	.028	.246	.321	10.309	very much	10.50	16.80	9.70	63.00	20.00	650
Hautaville	80	4,500	10	14.15	.170	.161	.200	.010	15.521	much	8.30	15.40	7.80	68.50	31.50	550
Campion	93	4,800	10d.	15.91	.301	.081	.231	.051	7.700	much	21.30	26.70	11.70	37.30	19.92	600
St. Leonards	100	1,500	11d.	11.20	.198	.070	.081	.247	6.992	much						

Colombo Commercial Company,

L I M I T E D

MANURE DEPARTMENT.

ANALYTICAL LABORATORY

IN CHARGE OF

THE COMPANY'S ANALYST,

MR. J. O. FERRIER, F. C. S.

ANALYSES OF ALL MANURES

SUPPLIED ARE GUARANTEED.

SOILS ANALYSED.

Special Fertilizers Compounded Under
European Supervision.

Colombo Commercial Co., Ltd.

MANURE DEPARTMENT.

The Company hold large stocks of the following Manures and can give prompt delivery at lowest market rates.

White Castor Cake,
Bone Meal, Blood Meal, Crushed Bones,
Sulphate of Ammonia,
Nitrate of Potash,
Sulphate of Potash,
Muriate of Potash,
Basic Slag,
Crushed Fish,
Concentrated Superphosphates,
Sulphate of Iron,
Kainit,
Nitrate of Soda,
Lime. Slaked and Unslaked,
Rape Cake,
Ground Nut Cake.

MANURING,

METHODS OF TAKING SAMPLES OF SOIL FOR ANALYSIS.

In sending a soil for analysis, the character of the subsoil should always be stated, and in addition the depth of the subsoil water, as these may have a paramount influence in determining the meaning of the analysis. The actual sample sent should always be taken in the following manner. Dig a hole in the plot of which an analysis is desired, fifteen inches deep, leaving a block in the centre of the hole 6 inches square. This block is therefore 6 in. \times 6 in. \times 15 in. in size. Have a box made of these inside measurements and invert it over the block of soil, and then remove the whole,—box, soil, and all,—by putting a spade underneath the block. Then fasten a cover on the box and send to the analyst, marking the end of the box which contains what was originally the surface soil. The analyst has thus a block showing the layers of soil as they occurred 'in situ' down to 15 inches deep, and valuable results may often be drawn from mere observation of them, which would be entirely missed if merely a shovel-ful of soil down to the same depth were sent for examination.—(*Mann.*)

REGULATIONS UNDER THE FERTILIZERS ORDINANCE 1901,

(*Extract from the Ceylon Government Gazette, No 5316 of November 5, 1901.*)

The following Regulations under section 9 of 'The Fertilizers Ordinance, 1901.' made by the Governor, with the advice of the Executive Council, are published for general information.

By His Excellency's command,

Colonial Secretary's Office,
Colombo, November 4, 1901

W. T. TAYLOR,
Acting Colonial Secretary

Commencement.

1. These regulations are to take effect on the first day of January, 1902, and to remain in force until altered or revoked.

Definitions.

2. In these regulations :—

“Analyst” means any person duly appointed as an Agricultural Analyst under the provisions of section 5 of the Ordinance.

“Authorized representative” means any person authorized by the Analyst to take samples, with the approval of the Governor.

“Buyer” and “seller” include their respective agents.

"Fertilizer" means any article sold for use as a fertilizer of the soil, which has been prepared or subjected to any artificial process in Ceylon or imported from abroad.

Other terms have the same meaning and scope as in the above-mentioned Ordinance.

Appointment of Agent.

3. An appointment of an agent by the buyer may be in the Form A set forth in the Schedule hereto or in a form to the like effect; and the provisions of these regulations relating to a buyer shall apply to an agent appointed by the buyer for the purposes of the above-mentioned Ordinance.

Proceedings by Buyer to procure Samples.

4. When the buyer of not less than a hundredweight of a fertilizer desires to have the same analysed in pursuance of the 6th section of the above Ordinance, he is, within ten days after delivery of the article to him or receipt of the invoice, whichever is later, either to give notice to the seller that he intends to take samples of the article himself, or to give notice in writing to the Analyst or authorized representative, stating that he desires that the samples shall be taken by the Analyst or authorized representative, as the case may be.

Regulations as to Samples taken by Buyer.

5. When the buyer intends to take the samples himself, he is to give at least three days' notice in writing of such intention to the seller, with particulars as to the place, day, and hour of sampling. If the seller does not attend, the samples are to be taken in the presence of a witness, who is to initial each sample.

6. The buyer is forthwith to deliver or send by post to the Analyst one of such samples, with the invoice or a copy thereof.

7. One of the remaining samples is to be delivered or sent by post to the seller and the other is to be retained by the buyer.

Regulations as to Samples taken by Analyst or authorized Representative.

8. When the buyer or the seller desires that the samples shall be taken by the Analyst or authorized representative, he is to give notice in writing to that effect to the Analyst or authorized representative, as the case may be. Such notice is to contain the names and addresses of the buyer and the seller, and such particulars as may be necessary to enable the Analyst or authorized representative to identify the article to be analysed, and may be in the Form B set forth in the Schedule hereto or in a form to the like effect. A copy of any such notice given by the seller is to be sent at the same time to the buyer.

9. The analyst or authorized representative, as the case may be, is to give at least three days' notice in writing to the seller and to the buyer as to the place, day, and hour of sampling, to enable them to be present at such sampling, if they so desire.

10. One of the samples taken by the Analyst or authorized representative is to be retained for the use of the Analyst in making this analysis, another delivered or sent to the seller, and the third delivered or sent to the buyer,

11. Any notice or sample required by these regulations to be given or sent by the Analyst or authorized representative to the buyer or the seller may be sent by post to the respective names and addresses stated in the notice to be given under Regulation 5.

12. The Analyst, or authorized representative, as the case may be, is, at or before the time of sampling, to be supplied by the buyer with the invoice or a copy thereof.

13. The Analyst or authorized representative is to provide any receptacle or other thing required by him for the samples

General Regulations for taking Samples.

14. When the fertilizer is delivered in bags or other packages, a number of bags or packages are to be selected as follows, viz. :—

Not less than 2 bags or packages where the quantity does not exceed 1 ton	
„ 3 „ „ „ „ „ 2 tons	
„ 4 „ „ „ „ „ 3 tons	

and one additional bag or package for every additional ton or part of a ton ; provided that in no case need more than ten bags or packages be selected.

15. The selected bags or packages are to be emptied separately on a clean and dry stone or wooden floor, worked up with a spade, and one spadeful from each set aside. The separate spadefuls are then to be thoroughly mixed, and any lumps broken up by the hand or spade. From this mixture three samples, each from half pound to one pound in weight, are to be taken and carefully and securely packed.

16. When the fertilizer is delivered in bulk, then, in like manner, portions are to be taken from different parts of the fertilizer and thoroughly mixed together, and the samples taken from a portion of such mixture

17. When the fertilizer consists of bulky material, uneven in character and likely to get matted together, such as shoddy, wool, refuse, hair, &c.,

portions are to be taken from the selected bags or packages, or from different parts of the fertilizer, if in bulk, the matted portions torn up, and the whole mixed as above directed, but no sample is to be less than one pound in weight.

18. As an alternative method, where neither the seller nor the buyer signifies objection thereto, samples of a fertilizer delivered in bags or other packages may be taken by a sampling pale or spear or pipe or tube, which shall not be less than twenty-four inches in length and two inches in diameter. The total quantity so abstracted for the samples shall be not less than five pounds where the quantity of the fertilizer does not exceed five tons, and not less than ten pounds where the quantity exceeds five tons, and shall be drawn from at least double the number of bags or packages required to be selected under Regulation 14.

General Directions.

19. In every case the sampling is to be done as quickly as is possible consistently with due care, and the material is not to be allowed to be exposed any longer than is absolutely necessary.

20. The object of the person taking the samples is to obtain samples fairly representing the bulk from which they are drawn, and therefore no bag, package, or cake is to be selected which has apparently been damaged while in the possession of the buyer.

21. Each sample is to be packed in a dry clean bottle or jar, or in some other suitable manner, so that the original composition of the fertilizer may be preserved.

22. The samples are to be so packed and secured that they cannot be tampered with, and are to be sealed and initialled by the person taking the sample. They may also be sealed by the buyer and the seller, if present and so desiring. Each sample is to be marked with the name of the article, the date and the place of the sampling, and with some distinguishing number.

Regulation as to Samples sealed by Seller and Buyer.

23. Where any samples are taken in the presence of, and sealed by, the seller as well as the buyer, such samples are to be deemed, as between the buyer and seller, to have been taken in accordance with these regulations.

Short Title.

24. These regulations may be cited as "The Fertilizers Regulations, 1902"

SCHEDULE

Form A

Appointment by Buyer of Agent for purposes of "The Fertilizers Ordinance, 1901."

I, *A. B.*, of _____, hereby appoint *C. D.* of _____ as the Secretary for the time being of the _____ Association (*or as the case may be*) to do on my behalf all things necessary for the purpose of obtaining an analysis under "The Fertilizers Ordinance, 1901." of the fertilizer bought by me under an invoice, a copy of which is annexed.

Form B,

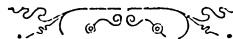
Request that the Samples may be taken by Analyst

To _____ (*here insert name and address of the Analyst*)

I, *A. B.*, of _____, hereby request that the necessary samples for the purposes of "The Fertilizers Ordinance, 1901." of the under-mentioned fertilizer may be taken by you or by some person duly authorized by you, for which I enclose the prescribed fee of Rs, _____.

Name and Address of Buyer.	Name and Address of Seller.	Description of Fertilizer identifying the Parcel.	Place where the Fertilizer can be sampled

N.B. - A buyer giving this notice should send therewith the invoice or a copy thereof, and a seller giving this notice is at the same time to send a copy thereof to the buyer.

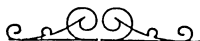


MANURING.

COST OF MANURES JULY, 1902.

Castor Cake	...	...	...	Rs. 67 to 70	per ton
Bones	...	...	...	.. 57 to 60	
Basic Slag	...	..	...	.. 56 to 70	
Superphosphate Conc.		.	...	.. 175	..
Superphosphate	...	...	...	.. 82	..
Sulphate of Ammonia		...	...	.. 230	,,
Do	Potash	...	...	.. 170/175	..
Do	Iron	...	...	.. 63 to 67/50	..
Nitrate of Potash		...	..	.. 235 to 255	,,
Do	Soda	...	...	.. 175 to 180	.
Muriate of Potash		...	...	,, 170/175	,,
Kainit	...	..	...	.. 55	..
Rape Cake	...	...	...	.. 60	..
Fish Crushed	...	...	...	.. 60/75	,,
Blood Meal	..	...	...	,, 130	,,
Coral Lime	...	...	...	,, 20	,,
Burnt unslacked Lime		...	...	,, 28	..

Above prices include bags free on rail Colombo.



NOTES ON MANURING.

Each field manured should be treated on its own merits after the composition of the soil has been obtained.

There are so many different methods of application and the cost of transport is so varied that figures under this head would not be very valuable.

The following extracts from Mr. Bamber's report on Ceylon Tea soils will be found useful :—

If possible the best time to manure is immediately before pruning, when poor bushes have to be built up.

The general practice on steep land has been to dig semicircular holes 5 or 6 inches deep just above the plant and to place the manure in these, mixing it with the soil at the bottom. This exposes the roots and confines the new roots to a circumscribed area and is expensive. A better plan on steep land is to make 6 or 7 alavangu holes a few inches apart in a semi-circle above the trees—mix the requisite amount of manure with surface soil and fill the holes. On more or less flat land a good method is to bury the prunings in holes dug between four bushes and apply the manure in these holes after the prunings have been converted into mould. If the holes are examined they will most probably be found full of new rootlets ready for manure.

For quartz land and land deficient in organic matter grow the "*Adhatoda Vasica*" in vacant places and hedges. This plant is found in the native garden fences up to 4,000 feet and is easily grown from cuttings. When grown bury the fresh leaves, immediately after being plucked, in holes between every four bushes.

The leaves of this plant are rich in nitrogen, containing 3.72% on the dry matter and have strong insecticidal properties. A good leguminous plant to grow for green manure or mulching is the "*Crotalaria Striata*." It grows up to 4,000 feet.

An essential condition for successful manuring is that the roots of the bushes must be healthy. If the plants either from bad planting or disease have small root growth it will not pay to manure them. The poorer the bush the nearer the manure must be applied, in the first instance, gradually extending the distance in subsequent applications to encourage a wider hold of the soil.

As far as possible poor bushes should be given a rest of some months after cutting down and manuring, otherwise the beneficial effect of manure will be slight.

For crop, on *good* fields the manure can be applied some months after pruning before the new wood has set. This will extend the period of flushing and enable the bushes to recover more quickly from the following pruning.

The best method of manuring tea, would be to apply the slowly available part of a mixture at or about the time of pruning, and six months to a year later apply broadcast a light dressing of readily available plant food.

Cattle Manure. This should always be protected from the rain otherwise it soon loses its most valuable matter. Gypsum, Kainit or Sulphate of potash occasionally sprinkled over the heap during its formation improves its value and prevents loss of nitrogen.

Basic Slag. Examination of Ceylon soils have shown a general poverty in phosphoric acid. Basic Slag contains 15 to 20% of free lime, 19 to 20% of phosphoric acid and about 12% of the lower oxide of iron and some manganese, and should supply the deficiency in most cases. A disadvantage is that basic slag cannot be mixed with nitrogenous manures in Colombo without the loss of nitrogen as ammonia. Mixing however is not essential as the manures can be applied from separate bags at the same time, or basic slag buried with the prunings, and the other manure applied separately.

Bracken Fern. Mr. John Hughes says:—Bracken Fern makes a valuable litter. It should be cut young when the mid rib is soft and juicy—sun dried and protected from rain when it furnishes a good soft litter and when subsequently enriched with droppings a very valuable manure especially rich in potash.

Vernacular Names. “Adhatoda Vasica” is called “Agaladara” by the Sinhalese and “Adatodai” by the Tamils. The upcountry Sinhalese sometimes use the word “Pawatta” and the Tamils “Aduthoda Pavetha.” It is common in hedges and waste ground.

“*Crotolaria Striata*” is called “Andanahiriya” in Sinhalese. There are many species of *Crotolaria* all often called by this name, or sometimes by the Tamils, “Kikukiluppai.” “*Crotolaria Striata*” has compound leaves large oblong pods with short stalks and no hairs, and 20–30 seeds. It grows 2–3 feet high and has yellow flowers striped with narrow purplish veins.



HOW TO BURY PRUNINGS (MANN.)

(1) They must be buried deep. At least six inches of soil should be left on top of them.

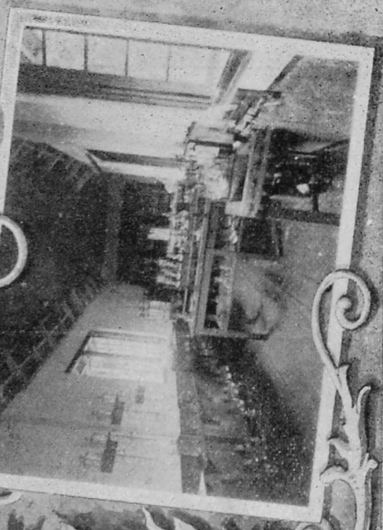
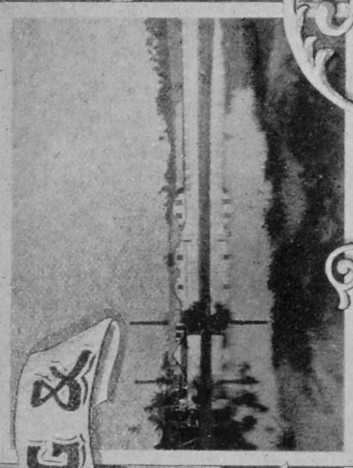
(2) They should be buried immediately on pruning or as soon after as possible. Once dried up much of the manurial value has gone, or is rendered less available.

(3) They should be buried with something which will destroy any latent germs or spores of fungi which are upon them. The best materials for this are lime and Basic slag, which not only cause the blight spores to be destroyed but also the prunings to rot more quickly. The usual way of applying the Basic slag, which is preferable, is to dust it over the buried prunings from a tin in which holes have been made, and immediately cover up the hole. In this way 4 to 5 cwts. would be applied per acre, and in Ceylon the method—coupled with a more complete manure on the surface the following spring—has been said to be eminently successful.



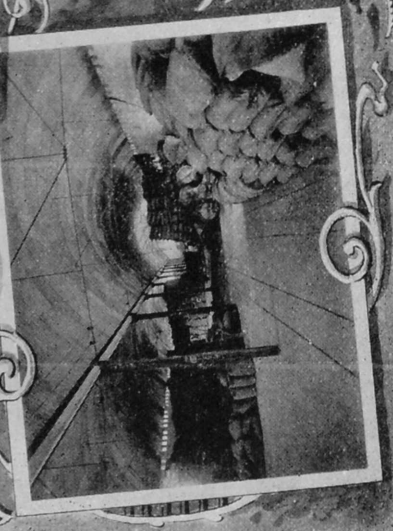
MULTISPORE MILLS

MANURE WORKS



THE LARGEST INDUSTRIAL WORKS IN CEYLON

REIDENBERG & CO. SINGAPORE



FREUDENBERG & Co.

HOLD LARGE AND VARIED STOCKS OF THE
FOLLOWING MANURES

For Sale

AT THE

HULTSDORF MILLS

MANURE WORKS.

No. 1 & 2, CASTOR CAKE, PATENT STEAMED BONE DUST.

Bone Meal, Ground Nut Cake, Nitrate of Potash, Freshly burnt Lime, Superphosphate, Flour Phosphate, Crushed Bones, Rape Seed Cake, Nitrate of Soda, Sulphate of Lime, Blood Meal, Fish Guano.

Best Indian Fish Manure, Concentrated Superphosphate, Good ordinary Basic Slag, Extra quality Basic Slag, Precipitated Phosphate of Lime, Sulphate of Iron.

SOLE AGENTS FOR THE

Stassfurt Potash Syndicate

KAINIT,

Muriate and Sulphate of Potash and all other Potash Salts.

GUARANTEED ANALYSES.

Special Fertilizers for TEA, COCOA, and
COCOANUT TREES Compounded.

AGRICULTURAL & ANALYTICAL LABORATORY.

FREUDENBERG & Co.,
COLOMBO.

WORKS :

New Bazaar, 1 to 8, Mill Street, 28 and 29, Belmont Street, 47, 48, and 49,
Wilson Street, 37, 38, and 39 Ferry Street.

OFFICES :

29, 30, 31, and 32 Chatham Street, Fort, Colombo.

COIR MATTING &c.,

FOR SALE AT THE HULTSDORF MILLS.

Best Twilled Coir Matting for Bungalow and Verandah use, with or
without coloured Borders, made to any dimensions.

Twilled Estate Matting for Barbacue and Store use, in rolls of 75 feet
or 60 feet long by 3 feet wide.

Coir Door Rugs and Carriage Mats Coir Tea Leaf Bags of every description.

FREUDENBERG & Co.,
COLOMBO.

DIFFERENT DISTRICTS—TYPICAL ESTATES AND MANURE RECOMMENDED.

ESTATE.	District.	No. of LBS. RECOMMENDED BY MR. BAMBER PER ACRE.										Approximate cost per acre in Colombo.		Carriage to nearest Railway Station.					
		White Cake.	Basic Slag.	Sulphate of Potash.	Sulphate of Ammonia.	Bone Meal.	Muriate of Potash.	Nitrate of Potash.	Super Phosphates.	Bones.	Precipitated Phosphates.	Kainit.	Chloride of Potash.		Total lbs. per acre.	Oz. per tree.	Rs. cts.	Rs. cts.	
Springwood	(a) Rakwana	250	200	50	50	..	..	..	..	..	..	..	..	67½	34	27	20	30	00
Doone Vale	(a) Udarama	350	300	100	50	..	..	..	..	..	..	..	..	800	44	31	15	4	57
St. Leonard-on-Sea	(b) Matale	500	..	50	..	..	..	..	..	..	300	..	..	850	44	28	00	7	61
Bandampolla	(a) Gampola	500	..	..	..	..	..	..	..	..	..	..	..	850	44	38	00	6	57
Attagarie	(a) Kalutara	150	225	25	50	12½	25	..	..	..	..	..	..	600	3	20	52	2	49
Pantiya	(a) Kelani Valley	150	200	50	50	100	50	..	..	..	..	..	..	600	3	24	89	10	00
Dunedin	(a) do	300	200	70	50	100	..	..	..	..	..	..	..	720	3½	28	25	10	00
Elston	(a) do	200	300	125	25	100	..	..	..	..	..	..	..	750	4	28	59	10	00
We-oya	(a) Dolosbage	120	140	50	40	..	50	..	..	..	..	..	..	480	2½	22	60	7	29
Pen-y-lan	(a) Pundaloya	500	300	50	..	..	..	..	..	..	..	..	..	850	4½	26	93	9	37
North Pundaluya	(a) Huma-giriya	180	220	70	55	110	..	..	..	..	..	..	..	670	3½	30	72	6	81
Elkadna	(b) Hantane	600	..	..	..	..	60	..	..	..	..	..	..	800	4	27	18	6	25
Gakaha	(b) Lower Dikoya	300	..	100	..	..	..	..	..	..	100	..	..	600	3	26	29	10	65
Carolina	(b) Ma-keliya	300	225	65	..	..	..	..	..	..	..	..	..	625	3½	24	00	10	65
Laxapana	(b) Pa-sara	400	200	50	..	..	..	..	..	..	..	..	..	650	3½	22	42	19	05
El Teb	(b) Dikoya	150	175	60	35	75	65	..	..	..	..	..	..	560	2½	24	14	10	65
Daravella	(a) Badulla	..	..	100	100	..	..	..	..	..	..	..	..	300	1½	25	76	19	05
Glen Alpine	(a) Haputale	250	..	..	..	..	..	..	..	..	..	..	..	550	2½	28	29	17	93
Lunugalla	(a) Dimbula	..	205	125	50	40	..	..	..	..	..	..	..	450	2½	25	86	11	13
Drayton	(a) Hewaheta Lower	500	200	100	..	..	..	..	..	..	..	..	..	800	4½	28	15	6	25
Loole Condera	(a) Nuwara Eliya	200	350	50	..	..	..	..	..	..	..	..	..	600	3	19	24	13	85
Kandapolla	(a) Arpa Patana	550	200	50	..	..	..	..	..	..	..	..	..	800	4½	26	76	11	85
Hauteville	(a) Udappu-sellawa	235	235	65	35	100	30	..	..	..	..	..	..	700	3½	26	14	11	85
St. Leonard	(c) do	170	225	55	55	..	55	..	..	..	..	..	..	560	2½	25	00	6	25
Gampion	(c) Bogawantalawa	170	225	55	55	..	55	..	..	..	..	..	..	560	2½	25	00	6	25

NOTE.—Basic slag should only be mixed at the time of application or buried with organic matter. In districts marked (a), the growing of the Adhatoda Vasica is advised and (b), Leguminous plants such as Crotolaria Striata, (c), this manure is a supplement to cattle manure. Manure is charged at 6th class rates for quantities of 4 tons, or at 3rd class rates on actual weight for quantities of less than 4 tons.

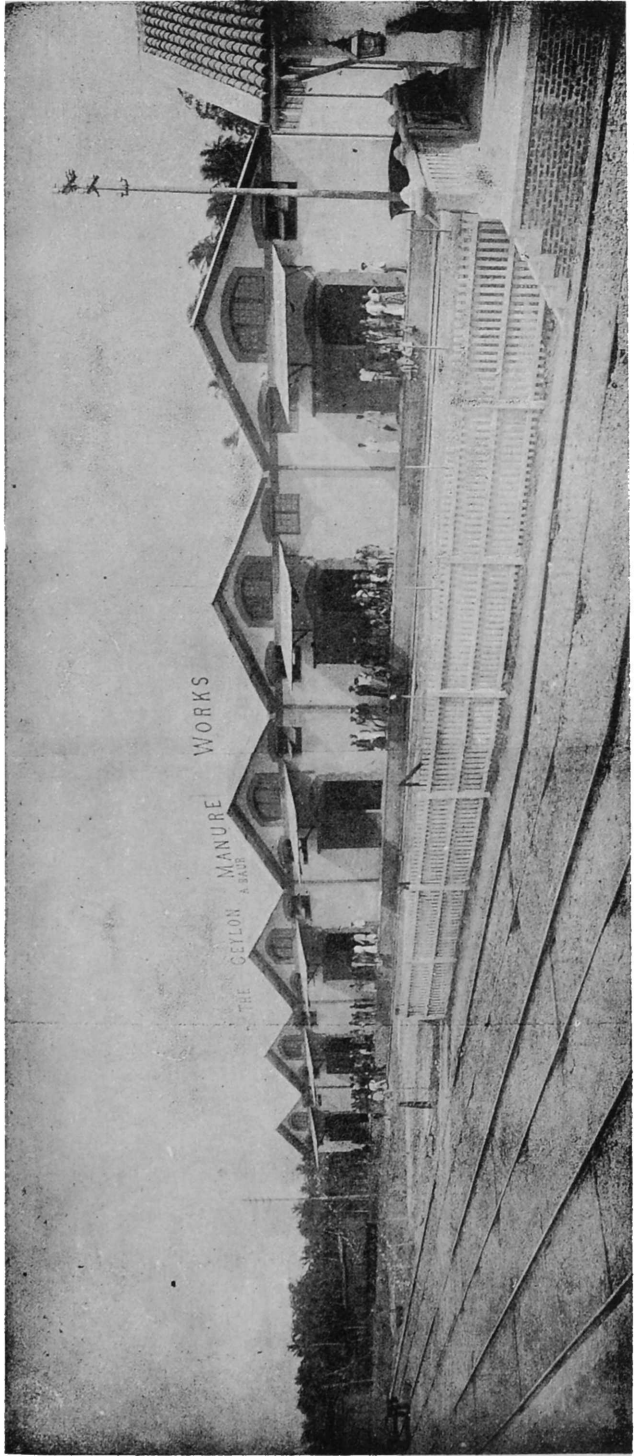
RESULTS FROM CATTLE MANURING ON 100 ACRES.
 MARIAWATTE ESTATE.

PLANTED 1879.

Year.	Yield per acre lbs. made Tea.	Rainfall inches.
1881	136	103·06
1882	312	113·60
1883	550	91·83
1884	1,092	82·72
1885	1,178	101·11
1886	1,059	99·60
1887	1,126	103·76
1888	1,033	111·92
1889	1,105	85·29
1890	1,347	85·10
1891	1,188	142·67
1892	1,184	95·74
1893	1,140	86·22
1894	1,090	72·00
1895	1,170	100·28
1896	1,119	115·41
1897	1,044	111·25
1898	1,073	79·90
1899	1,108	106·81
1900	1,357	111·63
1901	1,092	84·38



THE CEYLON MANURE WORKS.



OFFICE
NO. 5, PRINCE ST.,
FORT.

A. BAUR.

WORKS.
KELANIYA STATION
KELANIYA.

THE
CEYLON MANURE WORKS.

The only Firm in Ceylon established exclusively for Manures.

The largest Special Works in the Island,

*Buildings specially erected and fitted up throughout
with the latest manipulating machinery.*

Connected by Private Siding with the Port and all Railway Stations.

 **CHEMICAL LABORATORY.** 

Office: **A. B. A. T. R.** Office: **KELANIYA STATION**
COLOMBO.

PRUNING.

PRUNING.

In many districts this is done all the year round. All unhealthy wood cross branches growing inwards, whips, &c, should be removed and the centre well cleaned out. Trees should be pruned on their merits as it is not necessary to have a whole field exactly level this can be attained when the bushes are tipped. Pruning is done every 12 to 15 months in the low country but at an elevation of 6,000 feet the trees run to 3 or more years. Mr. Bamber says:—"Sickly trees should be collar pruned, *but manure must be applied* if this is done. All knives should be kept very sharp as a clean cut does much less damage to a plant than a partial cut or fracture." Cheap pruning is generally expensive in the long run.

NUMBER OF TREES PRUNED.

Distance of trees.	COST PER ACRE.						
	Rs. 4	Rs. 5	Rs. 6	Rs 7	Rs. 8	Rs. 9	Rs. 10
5 × 5	158	124	103	87	76	67	60
5 × 4	198	156	128	108	90	84	75
4½ × 4	220	173	112	121	105	93	84
4 × 4	248	194	160	136	118	105	94
4 × 3½	283	222	183	155	135	120	107
4 × 3	330	259	213	181	158	140	125
3½ × 3½	323	254	209	177	155	137	123
3½ × 3	377	296	244	207	180	160	143
3 × 3	440	346	285	242	210	186	167
Coolies per acre	11	14	17	20	23	26	29

ANALYSIS OF THE PRUNINGS OF TEA BUSHES.

Prunings of 10 Bushes were taken from each of the undermentioned Estates and the calculations are based on 3,500 trees per acre :—

Weight of Prunings.	PITAKANDE GROUP MATALA.			SUNNYCROFT VEYANOODA.		Total lbs. per acre.
	Bran- ches 73 lbs.	Leaves 35½ lbs.		Bran- ches 29·20 lbs.	Leaves 14·30 lbs.	
Analysis.	Bran- ches and twigs lbs. per acre.	Leaves lbs. per acre.	Total lbs per acre.	Bran- ches and twigs lbs. per acre.	Leaves lbs. per acre	Total lbs. per acre.
Dry Matter ...	13,943·45	4,959·85	18,003·30	5,988·50	1,918·00	7,906·50
Nitrogen ...	88·83	114·14	202·97	82·98	88·42	171·40
Total Ash ...	269·46	446·67	716·13	158·55	168·00	326·55
Lime ...	63·56	139·16	202·72	45·50	54·92	100·42
Magnesia ...	20·83	32·62	53·45	16·59	17·46	34·05
Potash ...	62·47	53·52	115·99	40·81	59·88	100·69
Phosphoric Acid ...	24·36	22·86	47·22	6·98	24·05	31·03
Oxide of Manganese	4·03	7·63	11·66	1·99	4·65	6·64



COMPOSITION OF TEA LEAVES.—(Kellner.)

DATE.	PERCENTAGE OF DRY MATTER.												
	Water in fresh leaves.	Grude Protein.	Grude Fibre.	Ethereal Extract.	Cellulose, &c.	Ash	Theine	Tannin.	Soluble in hot water.	Total Nitrogen.	Album Nitrogen.	Theine Nitrogen.	Amido Nitrogen.
May	15	30.63	9.10	6.48	49.09	4.69	2.85	5.53	36.18	1.61	14.3	0.81	0.66
"	30	24.25	17.25	6.42	47.32	4.76	2.80	9.67	37.17	3.88	2.77	0.79	0.32
June	15	22.83	17.38	6.65	48.26	4.88	2.77	10.10	36.12	3.65	2.73	0.78	0.14
"	30	21.02	18.69	6.83	48.50	4.96	2.54	10.25	36.06	3.37	2.43	0.73	0.21
July	15	20.06	19.16	7.00	49.49	4.29	2.51	9.40	31.72	3.21	2.31	0.71	0.21
"	30	19.96	17.56	8.59	49.43	4.46	2.30	10.44	33.77	3.19	2.25	0.65	0.29
August	15	19.05	17.72	10.85	47.80	4.58	2.30	10.75	32.70	3.05	2.28	0.65	0.12
"	30	18.58	17.95	12.14	46.35	4.86	2.22	11.09	34.00	2.91	2.19	0.63	0.16
September	15	18.27	19.13	13.40	44.35	4.85	2.05	11.32	30.01	2.95	2.27	0.59	0.08
"	30	18.15	19.17	14.16	43.41	5.11	2.06	10.91	33.05	2.91	2.39	0.58	—
October	15	17.91	18.66	17.23	41.14	5.06	1.83	11.21	34.76	2.87	2.45	0.52	—
"	30	17.98	18.40	19.50	39.05	5.07	1.79	11.27	36.80	2.88	2.35	0.51	0.02
November	15	17.70	18.26	20.38	38.66	5.00	1.30	11.34	38.21	2.83	2.30	0.37	0.16
"	30	17.14	18.34	22.19	37.31	5.04	1.00	12.16	37.91	2.71	2.35	0.28	0.11
May	15	16.56	17.62	14.18	46.50	5.14	0.81	11.11	36.45	2.67	2.43	0.23	0.01

Old leaves.

PLUCKING AND TRANSPORT.

PLUCKING TEA LEAF.

APPROXIMATE COST OF PLUCKING PER LB. OF MADE TEA AT VARIOUS YIELDS PER ACRE AND GREEN LEAF PLUCKED PER COOLY PER DAY.--H. K. R.

Yield per acre.	Average lbs. green leaf plucked per cooly per day during the Year.	Cost of plucking (including baskets) per lb made tea.
100 lbs.....	10·00	14·00
200 lbs.....	11·02	12·70
300 lbs.....	11·86	11·80
400 lbs.....	13·72	10·20
500 lbs.....	15·72	8·90
600 lbs.....	17·50	8·00
700 lbs.....	17·84	7·90
800 lbs.....	18·06	7·75
900 lbs.....	19·01	7·35
1,000 lbs.....	20·00	7·00

NUMBER OF PLUCKING DAYS IN A YEAR.

Kelani Valley	..	...	...	..	290 days.
Gampola	...	..	...	...	270 "
Dikoya	...	...	...	..	260 "
Agras	...	...	...	...	295 "

VALUE OF GREEN TEA LEAF,

a = Value of tea per lb. in cents Colombo.

b = Cost of Manufacture per lb. f. o. b. Colombo.

c = Profit per lb. manufacturcd.

V = Value of one pound green leaf.

$$V = \frac{a - (b+c)}{4}$$

GREEN LEAF SIFTER,

Ordinary Dimensions :— $\frac{3}{4}$ inch mesh.

Length.....9 feet 0 inches.....

Diameter, large end3 .. 6 ..

Do, small ,,1 .. 6 ,, ..

LEAF TRANSPORT,

By Rail :—Baskets weigh 10 to 16 per cent of net weight of leaf

Leaf Carts :—(Colombo Commercial Co.)

Small size for single bullock to take 10 baskets

24 in. x 18 in. each basket holding 35 lbs.... ..Rs. 130

Large size for 2 bullocks to take 28 baskets..... .. ,, 185 .

TRANSPORT BASKETS,

Capacity 60 lbs., weight 7 lbs., cost Kalutara cane Rs 1.50, cost whole
cane Rs 2.25.

Capacity 75 lbs., weight 9 lbs., cost Bamboo 75 cents.

PLUCKING BASKETS.

CYLINDRICAL SHAPE.

12 in. × 18 in. Kalutara Cane, capacity 15 lb.- cts. 26

12 .. × 25 22 34

Capacity 21 lbs. leaf, weight 3 lb.-, cost split cane in Dimbula 26 cents.

B A G S ,

Coir transport bags 3 feet broad by 3½ feet long, weight 4½ to 5 lbs, capacity 70 lb. leaf..... ..Cost in Colombo.....Rs. 1 05 to Rs. 1 10

NOTE.—8 lbs. leaf occupy about 1 cubic foot of space.

WIRE SHOOT ROPES AND ACCESSORIES.

The following are the usual systems of wire rope transport :—

- (1) The Endless-Running Rope, with carriers hanging therefrom and moving with it through frictional contact.
- (2) An Endless Rope, with the carriers hanging therefrom and moving with it, being rigidly fixed in position on the rope.
- (3) The Fixed Rope, in which the carriers are drawn along and hang from a fixed rope which acts also as a rail, returning on a parallel rope.
- (4) The Single-Fixed rope, in which one carrier is drawn to and fro, hanging from a fixed rope, by means of an endless hauling rope.
- (5) The use of Two Fixed Ropes, with an endless hauling rope, in which one carrier travels in one direction, while the other runs on a parallel rope in the opposite direction. This is a thoroughly serviceable type of Tramway capable of being used over extremely long spans, and of carrying loads up to 5 tons.
- (6) The use of One Fixed Rope placed on an incline on which carriers, uncontrolled by hauling ropes, from which are suspended loads, are allowed to run down at a high speed. This is generally called a "shoot"

Messrs. BULLIVANT & CO.'S STEEL WIRE SHOOTS.

Length.	Weight.						Price.	
	Cwt.	qr.	lb.	Cwt.	qr.	lb.	Rs.	Rs.
1000 ... feet ...	0	3	0	—	1	0	22	... 50 — 70
1500	1	3	1	—	1	3	19	... 103 — 110
2000 ... „ ...	2	2	20	—	3	1	20	... 140 — 170
2500	3	2	23	—	4	3	4	... 150 — 225
3000	5	1	16	—	8	2	44	... 230 — 380
3500	7	0	14	—	16	3	15	.. 265 — 600
4000 . ..	15	1	16		17	3	24	... 600 —
4500	13	3	6		15	1	6	.. 685 — 700
5280	24	3	3	—	...	...	...	.. 1220
6000	27	0	0	—	...	...	...	.. 1200

WINCHES 18 in Barrel ...	...	..	..	Rs. 250 each.
24 in. Barrel ...	..	...	..	.. 275 each.
30 in. Barrel ...	..	...	..	.. 300 each.

(MESSRS. WALKER SONS & Co.)

STEEL WIRE SHOOT ROPES, for spans of one mile and upwards : breaking strain 10·95 tons ;
 1 or mile Rs. 500·00

STEEL WIRE SHOOT ROPES, for spans of three quarters and seven-eighths of a mile ; breaking strain 8·38 tons ; per mile ... Rs. 425·00

WIRE SHOOT CRAB WINCHES, especially designed by us for tightening and regulating the tension on wire shoots Rs. 165·00

WIRE SHOOT RUNNERS, of special steel, large size, 1 or dozen ... Rs. 28·00
 Do. of special steel, small size, per dozen .. „ 22·00
 Do. small size, for transport of green leaf, per dozen „ 16·50

(THE COLOMBO COMMERCIAL COMPANY.)

LIPTON'S STEEL WIRE SHOOT ROPES.

For lengths up to and including $\frac{1}{8}$ ths of a mile	...	Rs. 400'00
For $\frac{3}{8}$ and $\frac{1}{2}$ of a mile length, per mile	.. ..	.. „ 420'00
For 1 mile lengths, per mile	.. ..	... „ 480'00

WIRE SHOOT RUNNERS.

Large size, per dozen	.. ..	... Rs. 27'00
Small size, per dozen	... ..	... „ 16 00

(MESSRS. LIPTON LIMITED.)

MICHIE'S WIRE SHOOT RUNNERS,

With 5 inch wheels	... ..	per dozen	... Rs. 36 00
With 3½ inch wheels	... ..	„ „	... „ 30'00

In ordering the diameter of wire rope and approximate gradient of shoot should be given.

(EASTERN PRODUCE AND ESTATES Co.)



NOTES.

WITHERING AND FANS.

WITHERING.

SPACE FOR GREEN LEAF.

Building about 8 feet high at eaves. Area of floor in square feet = lbs. of green leaf which building can wither.

To estimate probable greatest quantity green leaf you will pluck in one day :—

Y = Estimate of year's crop made tea in lbs.

X = Approximately the greatest quantity green leaf in lbs. likely to be plucked on one day,

$$X = \frac{Y}{25}$$

In wet districts it is necessary to provide withering space for twice this quantity.

ANOTHER WAY.—Largest daily quantity of made tea = 1 % of the year's crop ; therefore multiplied by 4 = greatest quantity of leaf likely to be plucked in one day.

WOODEN TATS.

These are said to give the best wither except in very wet districts where the boards may become saturated.

A withering room 78 feet \times 30 feet \times 9½ feet high holds 14 sets of tats each set containing 19 tats. 21 feet long, 3 feet 9 inches broad, and 5 inches apart, centre to centre giving 23.910 feet of withering surface holding 2,300 to 2,400 lbs. leaf, *very thinly* spread which equals 10 square feet per lb. of leaf.

Venesta or 3/8 inch pine boards with a frame work of 1¼ in \times 1½ in. Ceylon timber cost 12 cents per square foot of timber used.

HESSIAN TATS

2 1/8 linear feet required to one square foot of floor. 6 or if thinly spread 10 square feet of hessian will be required for 1 lb. of leaf. Cost inclusive of timber, screws, jute hessian and labour 3 cents per square foot. Fairweather's tats including timber, wire, hooks, hessian and fixing up cost about 20 cents per square foot of floor.

Six boys and a head cooly will attend to 5,000 lbs. leaf a day.

One hundred lbs. green leaf withers down to from 45 to 67 lbs. and turns out 23 to 25 lbs. tea.

A perfect wither should have a sweet apple like odour. (Bamber.)

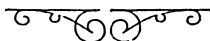
GREEN LEAF WITHERING,

As steam may possibly be employed for the above purpose in future inventions, the following notes and tables are inserted.

DRYING BY STEAM.—From "*Steam*."

"The Philosophy of drying or evaporating moisture by heated air rests upon the fact that the capacity of air for moisture is rapidly increased by rise in temperature. If air of 52 degrees is heated to 72 degrees, its capacity for moisture is doubled, and is four times what it was at 32 degrees. The following table gives the weight of a saturated mixture of air and aqueous vapour at different temperatures up to 160 degrees—the practical limit of heating air by steam—together with weight of vapour in pounds and percentage, and total heat, with the portion thereof contained in the vapour."

"By inspection of the following table it will be seen why it is more economical to dry at the high temperatures. The atmosphere is seldom saturated with moisture, and in practice it will be found generally necessary to heat the air about 30 degrees above the temperature of saturation. The best effect is produced where there is artificial ventilation, by fan or by chimney, and the course of the heated air is from above, downwards."



SATURATED MIXTURES OF AIR AND AQUEOUS VAPOUR.

Temperature degrees Fahr.	Weight of 100 cub. ft. of mixture in lbs.	Weight of water in 100 cub. ft. of mixture. in lbs.	Per cent. of water in mixture.	Heat units in 100 cub. ft. of mixture.	Per cent. of heat in Vapour.	Temperature degrees Fahr.	Weight of 100 cub. ft. of mixture in lbs.	Weight of water in 100 cub. ft. of mixture in lbs.	Per cent. of water in mixture.	Heat units in 100 cub. ft. of mixture.	Per cent. of heat in Vapour.
35	8.004	0.034	0.42	42.8	86.69	100	6.924	0.283	4.08	422.0	74.58
40	7.920	0.041	0.52	59.8	76.59	105	6.830	0.325	4.76	471.7	76.22
45	7.834	0.049	0.62	77.7	68.98	110	6.741	0.373	5.23	533.9	77.88
50	7.752	0.059	0.76	97.6	66.29	110	6.650	0.426	6.41	599.1	79.52
55	7.688	0.070	0.91	118.3	64.58	120	6.551	0.488	7.16	672.4	81.14
60	7.589	0.082	1.08	140.1	61.31	125	6.454	0.554	8.55	750.5	82.62
65	7.507	0.097	1.29	164.9	64.76	130	6.347	0.630	9.90	839.4	84.13
70	7.425	0.114	1.49	189.7	66.21	135	6.238	0.714	11.44	936.7	85.57
75	7.342	1.134	1.79	221.6	66.74	140	6.131	0.806	13.14	1042.7	86.89
80	7.262	1.156	2.15	253.6	68.02	145	6.015	0.909	15.11	1160.6	88.13
85	7.178	1.182	2.54	289.7	69.66	150	5.891	1.022	17.33	1288.4	89.39
90	7.108	1.212	2.98	330.2	71.19	155	5.764	1.145	19.88	1427.4	90.53
95	7.009	1.245	3.50	373.4	72.87	160	5.679	1.333	23.47	1638.7	91.93

F A N S .

The use of hot air is a decided advantage on estates where there is frequently a difficulty of obtaining a wither as although the flavour (if any in the leaf) is not quite so marked when hot air is used. the advantage of getting a wither before other putrefactive changes commence is obvious.

The best results with good medium jat leaf are obtainable with a 60 to 54% wither though with some leaf an excellent feel is obtained with a loss of 35% moisture. (Bamber.)

The length of time that leaf should be withering can only be regulated by using artificial means of drying.

Messrs. Davidson & Co.'s Sirocco centrifugal fans have been worked with great success as the following table over leaf will show :—

LEAF WITHERING.

Results of Experiments with Sirocco Fans on 9 Estates.

The best results were obtained by passing through the lofts over the leaf a cool air 80 %. (100 % being the full saturation.)
In these tests no hot air was admitted from the dryers.

Estate.	District.	Elevation in feet above sea level.	Weather conditions.	Condition of Leaf on arrival at Factory.	Weight of green leaf in lbs.	Time required to wither leaf in hours.	Weight of withered leaf in lbs.	Class of percentage of wither.	Number and description of Fans.
1	Kelani Valley	100	rain at intervals	covered with surface moisture	2,840	15	1,404	Good, soft & even 50 %	Two 30 in. sirocco cased Fans
2	Kelani Valley	900	raining all day & night	sopping wet	2,771	10	1,628	even wither 58 %	Two 30 in. sirocco Fans
3	Morowa Korle	2,000	raining all the time	very wet	4,262	15	2,244	good wither 52 %	Four 30 in. sirocco Fans
4	Ratnapura	1,500	showery	slightly moist	3,416	7½	2,302	rather under-withered 67 %	Two 50 in. sirocco Fans
5	Agrapatna	5,000	thick mist	covered with surface moisture	3,736	10½	1,970	54 % good even wither	Two 35 in. sirocco cased Fans
6	Bogawantalawa	4,500	showery	slightly moist	1,740	12	870	50 % soft and even	Two 30 in. sirocco cased Fans
7	Lindulu	4,500	raining all the time	sopping wet	2,844	18	1,656	soft & clammy, very even	Two 35 in. sirocco Fans
8	Pasana	3,000	raining	very wet	2,968	13½	1,560	good soft wither 52 %	Two 35 in. sirocco cased Fans
9	Udappussellawa	5,000	very wet	covered with surface moisture	3,000	17	1,712	57 %	Two 35 in. cased Fans

Messrs. David-on & Co., have also patented a withering machine. It is driven by its own engine. Its capacity is 480 lb. green leaf which it withers in 30 to 40 minutes. F. O. B. Birkenhead
Hygrometers (wet and dry bulb thermometers) for testing the humidity of the air, price each £450
... .. Rs. 15'00

PRICES OF FANS.

(Davidson's Sirocco Fans):	F. O. B. Birkenhead.	Ceylon Charges.
30 in Centrifugal Wall Fan .	£20 10 5	Rs. 13.00
35 in. " "	£26 14 2	" 16.50
40 in. " " " ..	£35 8 5	" 24.50
30 in " Cased " ..	£13 6 4	" 26.00
35 in. " "	£58 5 0	" 31.50
40 in. " " " ..	£78 10 0	" 40.00

The 35 in. cased fan is the one chiefly recommended.

SUN FANS.

(Brown & Davidson):

48 in Sun Fan	... £20 0 0	}	Ex Works
36 in. " "	. £14 0 0		

WING'S DISC FANS.

(Colombo Commercial Co.):

48 in Encased Fan	.. £20 0 0	}	Ex Colombo Mills
60 in. " "	... £32 0 0		
72 in Skeleton ..	. £32 0 0		

BLACKMAN'S FANS.

(Walker Sons & Co.):

36 in Fan £14 6 0	}	Total at Ship's Side, Colombo
48 in. " ...	.. £20 14 6	
60 in. " ...	... £31 2 5	

ALAND'S AIR-PROPELLER.

(Brown & Co.):

30 in	... Rs. 150.00	}	Ex Godowns Colombo
48 in.	... " 285.00		
8½ in.	... " 720.00		

MACHINERY.

CARE OF BOILERS.

- (1). Warm boiler gradually. Do not get up steam from cold water in less than four hours.
- (2). Moderately thick fires are most economical. Fire evenly and regularly, a little at a time. Do not clean fire oftener than necessary, and keep fire door open as short a time as possible.
- (3). Cleaning must be done thoroughly inside and outside. This frequency of cleaning will depend upon the nature of fuel and water; but the boiler ought to be opened at least every two months.
- (4). Never fill a hot boiler with cold water.
- (5). The dirty water should be blown off every morning; allow the cock to stand open for two or three minutes when the steam pressure is about 5 lbs.
- (6). If the boiler is not required for some time, fill full of water containing a quantity of common washing soda; or fill nearly full and pour on this a quantity of crude petroleum, and then run out water.
- (7). Gauge cocks and water gauges must be kept clean. Water from gauge glass should be blown at least twice a day. If the water does not return quickly to the glass the connections require cleaning, which can be done with a wire. It does not follow that there is plenty of water in the boiler, because it shows in the glass, hence the importance of blowing through the gauge cocks frequently.
- (8). Lift each safety valve by hand in the morning to see that it is free.
- (9). Do not empty the boiler under steam pressure, but cool it down with the water in, then open and blow out cock.
- (10). Check valves and self-acting feed valves should be frequently cleaned. Get the feed valves so as to give a constant supply and keep the water up to say half glass.
- (11). In case of low water, immediately cover the fire with ashes and earth, wet if possible, and open furnace door. Draw fire as soon as it can be done without increasing the heat. Never turn on, feed, start, or stop the engine, or lift safety valve, but let boiler cool.
- (12). The principal points to be observed in the care of engines are to keep all wearing parts well oiled, and in thorough repair, and thoroughly clean: everything about an Engine and Boiler Room should be kept clean and tidy; dirt increases the wear and tear and often hides faults which would be otherwise noticed.
- (13). Should engine not be required for a short time, the fly wheel should be turned through one or two revolutions every day.

PREVENTION OF SCALE IN BOILERS,

Chemical compounds poured into a boiler, are of no use in either removing scale or preventing its formation, and many of them are injurious to the plates. The mineral matter forming scale is first precipitated in a boiler in the form of powder, or sludge, and it should be removed before it has time to deposit on the plates, and harden to form scale: this may be effected by partial blowing off. The formation of scale may be prevented by blowing off the water from stationary boilers, for a few minutes before stirring up the fires in the morning and before banking them at night, with the pressure of the steam at about 5 lbs. per square inch.—*The Practical Engineer*.

A further prevention of the adhesion of deposit to the inside of the boiler will be found in the application of common soda. The quantity which may be used with advantage is 1 lb. for an 8 H. P. boiler, 2 lbs. for a 16 H.P. and so on in proportion per week; the soda should be first dissolved in hot water, and the latter emptied by proportions into the feed water-tank, say one-third at a time, the soda is thereby mixed with the water and duly forced into the boiler by the feed pump: it largely prevents the incrustation of any ingredients on the inside surface, and by periodically blowing out, the injurious sediment is removed altogether. It is a remedy easily procured and readily applied, is very effectual, and produces no deteriorating effect on the tubes or plates.—*The Ceylon Tea-Makers' Hand-Book*.

Note.—Every boiler should be examined once a year by a qualified engineer and tested with *water* pressure to double its ordinary working steam pressure.

MACHINERY.

STEAM ENGINES.

Names of English Firms.	...	Local Agents.
Brown & May	...	Messrs. Brown & Co.
Marshall Sons & Co.	.	Walker Sons & Co.
E. R. & F. Turner	..	W. H. Davies & Co.
R. Hornsby & Sons	...	Colombo Commercial Co.
F. S. Hindley	...	Walker & Greig

TURBINES.

Low fall	...	Jonval, Victor, Hercules, Perfection.
Medium fall	...	Centre Vent, Vortex.
High fall	...	Giard, Pelton Wheel.

HYDRAULIC RAM,

This is a self acting pump in which part of the water supplied to operate it, forced to a level that may be a considerable height above the level of the source of supply. They are invaluable to those who require water raised from a small stream on a low level to tanks on a hill; all that is necessary is a small fall of water say from 5 to 10 feet.

About one-sixteenth of the quantity of supply water may be raised to twelve times the fall.

THE "VULCAN HIGH DUTY HYDRAULIC RAM."

(MESSRS. BROWN & CO.)

OIL ENGINES.

"Hornsby Akroyd" ...	...	Messrs. Brown & Co.
"Campbell" ..	...	Walker Sons & Co.
"Clayton & Shuttleworth"	...	Walker & Greig
"Cundall" ...	...	Brown & Davidson
"Globe" ..	...	W. H. Davies & Co.

Cost of Oil :—Ordinary Bulk Petroleum per gallon at Colombo 33 cents, Nawalapitiya 15 cents, Hutton 15 cents, Nannuya 18 cents. Bandara-wella 50 cents. Less Government Rebate of 25 cents per gallon deducted.

The "Cundall" Oil Engines :—

Brake H. P. 8, 12, 15½.

Weight Approximate 36 cwt., 50 cwt., 64 cwt.

Cost F. O. B. England, Approximate up to 12 B. H. P. £15

Per B. H. P. up to 30 B. H. P. £12—per B. H. P.

Consumption of Oil per hour ¾ pint per hour per H. P.

The "Hornsby Akroyd" Oil Engines :—

Brake H. P.	6½	9½	12½	16
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Approximate weight (gross) cwts. ..	38	47	70	90
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Cost F. O. B. England ...	£120	£115·10	£185·10	£222
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Freight, Shipping Charges, &c.,

to Colombo ...	£9·12	£11·12	£14·16	£17·10
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Consumption of Oil from ½ to ¾ of a pint per B. H. P. per hour.

The "Campbell" Oil Engines :—

Brake Horse-power ...	7	10½	15
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Approximate (gross) weight cwts... ..	31	48	84
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Cost F. O. B. England without

water vessel ...	£111-3-0	£138-18-9	£171-7-2
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Approximate Freight ..	£4-11-11	£8-17-0	£11-15-4
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Landing Charges ...	Rs. 30	Rs. 40	Rs. 50
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Consumption of Oil per hour—1 pint per Brake Horse-power.

GOVERNMENT REGULATIONS. JULY 4TH, 1902.

The following rules made by the Governor, with the advice of the Executive Council, in terms of section 4 of the Ordinance No. 2 of 1896, are published for general information :—

In these rules, unless the context otherwise requires—

“Child” means a person under the age of 14 years.

“Young person” means a person of the age of 14 years and under the age of 18 years,

“Woman” means a woman of 18 years of age and upwards.

“Machinery” includes any driving strap or band.

“Mill-gearing” comprehends every shaft, whether upright, oblique, or horizontal, and every wheel, drum, or pulley by which the motion of the first moving power is communicated to any machine.

1. Every hoist or tackle, near to which any person is liable to pass or to be employed, and every wheel, if within a distance of 3 ft. 6 in. from the floor, directly connected with steam, water, electrical, or other mechanical power, whether in the engine-house or not, and every part of a steam, gas, or oil engine, electrical motor, dynamo, or water-wheel, shall be securely fenced; and

2. Every wheel-race not otherwise secured shall be securely fenced close to the edge of the mill-race; and

3. Every part of the mill-gearing belting, ropes, or chains driven in any way whatever within a distance of 3 ft. 6 in. from the floor, shall either be securely fenced or be in such position or of such construction as to be as safe to every person employed in the factory as it would be if it were securely fenced; and

4. All fencing shall be of wood 3 ft. 6 in. high, post- 3 in. by 3 in., top rail 3 in. by 2 in., intermediate rail-, two in number, 2 in. by 1½ in. If iron is used for rails it must be not less than 1 in. in diameter, and shall be maintained in an efficient state while the parts required to be fenced are in motion.

5. All wires conveying electrical current from the dynamo to the motors or lamps shall have highly insulated covering so as to constitute no source of danger; and

6. Every main switchboard shall be under lock and key and bear clear instructions for its use by the inexperienced,

7. No child shall be allowed to clean any part of the machinery in the factory while the same is in motion

8. No young person or woman shall be allowed to clean any mill-gearing belts, ropes, or chains conveying motive power from the driving to the driven machine while the same is in motion,

9. No child, young person, or woman shall be allowed to work between fixed and traversing parts of any self-acting machine while the machine is in motion.

10. No person shall be allowed to have or shall have control over a boiler in which steam is generated for the purpose of driving machinery, unless he can produce a certificate of competency in the annexed form A from the Inspecting Engineer appointed by Government, or from an Engineer specially licensed for the purpose by the Government, or from the Engineer in charge of such boiler.

11. All persons specially authorized in writing thereto by the Government shall be Inspectors for the purposes of Ordinance No. 2 of 1896 in respect of such factories as shall be enumerated upon such written authority, and shall at all reasonable hours of the day have free access to such factories for the purposes of inspecting machinery in use therein, or any part thereof, and shall report to the Government Agent any failure to comply with the provisions of these rules.

The Inspectors thus appointed shall furnish once a year, if possible, a report on each factory in their charge and forward it to the Government Agent, on or before the date appointed by that officer, accompanied either by a certificate in the annexed form B (Certificate of Compliance) or by a statement showing why he is unable to grant such certificate.

Such certificate shall be signed by the Engineer in charge of such boiler or boilers and connected machinery, or other Engineer nominated by the owner of such factory and specially licensed for the purpose by Government.

12. For the purposes of these rules the Governor may accept a certificate in the same form signed by the Engineer in charge of a boiler and connected machinery in lieu of a certificate by an Inspector appointed under rule 11, provided that such certificate be made annually and sent to the Government Agent of the Province in which the factory is situated not later than the 31st January.

13. Upon receipt of the certificate referred to in the foregoing rules, the Government Agent shall forward a copy to each of the persons named therein, such copy being duly countersigned by the Government Agent.

14. It shall be lawful for the Government Agent, when he is satisfied that any part of the machinery of a factory is a source of danger to any person or persons employed therein, to make an order in writing directing that such protective measure as he may think necessary be taken in regard to such part of the machinery.

15. The manager or superintendent shall carry out such order as quickly as possible, unless he lodges within ten days of the receipt of the order an appeal against the order to the Governor in Executive Council, by whom the order may be confirmed, modified, or annulled.

16. The superintendent or manager shall comply with the order which may be made by the Governor within two weeks of the receipt of a communication containing the decision arrived at

17. Nothing in these rules shall be read or construed to preclude a special inspection being made of any factory at any time within reasonable hours, by any person duly and specially authorized by the Government Agent to make such special inspection.

The rules dated 27th October, 1897, and 28th April, 1901, are cancelled.

Form A (Certificate of Competency).

I, the undersigned (being an Engineer specially licensed under the provisions of Ordinance No. 2 of 1896), do hereby certify that _____, whose description is on the back of this certificate, and who is now in charge of the boilers in factory No. _____, known as _____, in the village _____, in _____ korale of the _____ Province, is to the best of my knowledge and belief a suitable and capable person to have control of boilers in which steam is generated for the purpose of driving machinery.

On the other side of the certificate the following particulars shall be inserted:—

Name in full.		Nationality.
Birthplace.		Complexion.
Age.		Height.
		Signature : _____

Form B (Certificate of Compliance).

I, the undersigned (being an Engineer specially licensed under the provisions of Ordinance No. 2 of 1896), hereby certify to the best of my knowledge and belief that the rules published in _____, under section of Ordinance No. 2 of 1896, are being complied with in the factory No. _____ known as _____ factory, and situated in the village _____, in _____ korale of the _____ Province, and that as far as I can discover they have been complied with since my last inspection on _____

Date : _____ Signature : _____

The last sentence can be struck out if the factory has not been previously inspected.

The form to be in duplicate, one copy to be kept in the Kachcheri.

Note.—All the engineering firms issue certificates. The charge for Form A is generally Rs. 5 and for an annual inspection and Form B Rs. 10

WATER WHEELS AND TURBINES,

LEFELS WEIR TABLE.

From $\frac{1}{8}$ inch depth to 25 inches depth.

Inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	Inches
1	·40	·47	·55	·65	·74	·83	·93	1·03	1
2	1·14	1·24	1·36	1·47	1·59	1·71	1·83	1·96	2
3	2·09	2·23	2·36	2·50	2·63	2·78	2·92	3·07	3
4	3·22	3·37	3·52	3·68	3·83	3·99	4·16	4·32	4
5	4·50	4·67	4·84	5·01	5·18	5·36	5·54	5·72	5
6	5·90	6·09	6·28	6·47	6·65	6·85	7·05	7·25	6
7	7·44	7·64	7·84	8·05	8·25	8·45	8·66	8·86	7
8	9·10	9·31	9·52	9·74	9·96	10·18	10·40	10·62	8
9	10·86	11·08	11·31	11·54	11·77	12·00	12·23	12·47	9
10	12·71	13·95	13·19	13·43	13·67	13·93	14·16	14·42	10
11	14·67	14·92	15·18	15·43	15·67	15·96	16·20	16·46	11
12	16·73	16·99	17·26	17·52	17·78	18·05	18·32	18·58	12
13	18·87	19·14	19·42	19·69	19·97	20·24	20·52	20·80	13
14	21·09	21·37	21·65	21·94	22·22	22·51	22·79	23·08	14
15	23·38	23·67	23·97	24·26	24·56	24·86	25·16	25·46	15
16	25·76	26·06	26·36	26·66	26·97	27·27	27·58	27·89	16
17	28·20	28·51	28·82	29·14	29·45	29·76	30·08	30·39	17
18	30·70	31·02	31·34	31·66	31·98	32·31	32·66	32·96	18
19	33·29	33·61	33·94	34·27	34·60	34·94	35·27	35·60	19
20	35·94	36·27	36·60	36·94	37·28	37·62	37·96	38·31	20
21	38·65	39·00	39·34	39·69	40·04	40·39	40·73	41·09	21
22	41·43	41·78	42·13	42·49	42·84	43·20	43·56	43·92	22
23	44·28	44·64	45·00	45·38	45·71	46·08	46·43	46·81	23
24	47·18	47·55	47·91	48·28	48·65	49·02	49·39	49·76	24

EXPLANATION OF WEIR TABLE.

The foregoing table gives the number of cubic feet of water passing per minute over a weir for each inch in breadth, from $\frac{1}{8}$ of an inch in depth to 25 inches depth. The figures 1, 2, 3, etc., in the first and last perpendicular columns, are the inches depth of water over weir, while the first or top horizontal column represents fractional parts of an inch, from one-eighth to one inch. The body of table shews the cubic feet and decimal parts of a cubic foot that will pass each minute for each depth of weir, from one-eighth to twenty-five inches, as before stated. But each result is for but one inch in width; so, for any particular number of inches breadth of weir the result obtained in table must be multiplied by the number of inches of breadth the weir may be. For example, suppose the notch or weir be 20 inches wide, and the water $5\frac{1}{2}$ inches deep: in the first or last column find the figure 5, follow the horizontal column until the

perpendicular column is reached containing $\frac{1}{2}$ at the top. In the square, where the two columns meet will be found 5.18 (five and eighteen hundredths) cubic feet. This is the quantity of water that will pass for each inch in width; but, since the supposed weir was 20 inches wide, this result must be multiplied by 20, which gives 103.60 (one hundred and three and sixth-tenths) cubic feet per minute.

TO FIND THE POWER OF WELL-MADE TURBINE. (Lamont),

Multiply the cubic feet of water per minute by the height of the fall, and divide by 700; the quotient will be the horse power of the wheel.

TO FIND THE EFFECTIVE POWER OF A WATER-WHEEL, (Hatton.)

Multiply the quantity of water expended in cubic feet per second by the effective height of the fall in feet, and divide the product by one of the following divisions;—viz, 11.7 for "High Breast" Water Wheels, 13 for "Overshot"; 15 for "Breast" and 22 for "Undershot" Water Wheels.

EXAMPLE:—Required the effective horse-power of a "High Breast" water wheel requiring 29 cubic feet water per second, the effective height of fall being 29 feet 3 inches, then

$$\frac{20 \times 29.25}{11.7} = 50 \text{ effective horse power.}$$

TO FIND THE HORSE POWER THAT MAY BE DEVELOPED BY A WELL MADE WATER WHEEL,

D = diameter of Water Wheel in feet.

W = width of buckets in feet.

d = depth of shrouding (radial depth of bucket) in feet.

v = velocity of periphery in feet per second

$$\text{Horse Power} = \frac{D \times W \times d \times v}{24}$$

EXAMPLE:—Required the Horse Power of a 20 feet Water Wheel having buckets 2 ft 6 in wide, 7½ in deep, then

$$\frac{20 \times 2\frac{1}{2} \times \frac{3}{8} \times 58}{24} = 75 \text{ horse power.}$$

Example :—

Diameter of pulley on machine = 24 inches.

Speed of machine = 100 revolutions per minute.

Speed of main shaft = 120 revolutions per minute.

Then diameter of pulley required on main shaft = $\frac{24 \times 100}{120} = 20$ inches.

To find the diameter of a Pulley required on a machine, so that it may be driven at a given speed (the diameter of the pulley on the main shaft and the speed of the main shaft being known).

Multiply the diameter of the pulley on the main shaft, by the speed of the main shaft and divide the product by the given speed of the machine.

Example :—

Diameter of pulley on main shaft = 20 inches.

Speed of main shaft = 120 revolutions per minute.

Speed of machine = 100 revolutions per minute.

Then diameter of pulley required on machine = $\frac{20 \times 120}{100} = 24$ inches.

To find the speed at which any machine will be driven, by a main shaft at a given speed (the diameter of the pulley on main shaft and machine being known).

Multiply the diameter of pulley on main shaft by the given speed of main shaft and divide the product by the diameter of the pulley on the machine.

Example :—

Diameter of pulley on main shaft = 20 inches.

Speed of main shaft = 120 revolutions per minute.

Diameter of pulley on machine = 24 inches.

Then speed at which machine will be driven = $\frac{20 \times 120}{24} = 100$ revolutions per minute.

To find the speed at which the main shaft would have to be driven, to drive any machine at a given speed, (the diameters of the pulleys on the main shaft and machine being known) —

Multiply the diameter of the pulley on machine by its given speed and divide the product by the diameter of the pulley on the main shaft.

Example :—

Diameter of pulley on machine = 24 inches,

Speed of machine = 100 revolutions per minute.

Diameter of pulley on main shaft = 20 inches,

$$\begin{aligned} \text{Then speed at which main shaft would have to be driven} &= \frac{24 \times 100}{20} \\ &= 120 \text{ revolutions per minute.} \end{aligned}$$

BELTING,

To find the width of belting required to transmit a known horse power—

Let W = width of belt
 HP = horse power required to be transmitted
 D = diameter of driving pulley in inches
 N = number of revolutions per minute of driving pulley
 C = 1,500 for 10 ply belting
 C = 2,100 „ 8 „ „
 C = 2,900 „ 6 „ „
 C = 4,300 „ 4 „ „

Then

$$W = \frac{HP \times C}{D \times N}$$

Example :—What width of 8 ply belting would be required to transmit 10 H. P., the driving pulley being 30 inches diameter at 100 revolutions a minute

$$W = \frac{10 \times 2100}{30 \times 100} = 7 \text{ inches.}$$

Long belts are more effective than short.

Leather Belting :—Occasionally oil with fish oil.

Holes for laces and rivets should be punched with a hollow punch not roughly bored.

Redaway's Camel brand belting	...	Ceylon Agents—Walker Sons & Co.
Gaudy's Cotton belting	...	do. C. C. C.—Brown & Co.
Balata belting	...	do. Bosanquet & Co.
Scandinavia belting	...	do. Brown and Davidson.
Rossendale's belting	...	do. Walker and Greig.

TEA ROLLERS.

Name.	Price in Colombo	Approx capacity withered leaf.	Weight.	Size of pulley.	Revolutions per minute.	H. P. to drive.
JACKSON'S.	£	lbs.	C. qr. lb			
"Little Giant" .	40	50	11 0 0	18" x 3½'	60	1
24 in. "Economic" ..	70	100	19 0 0	21" x 5'	85	2
24 in. "Economic" } Brass mounted }	75	100	20 0 0	21" x 5'	85	2
28 in. "Economic" ..	110	250	38 0 0	21" x 5'	100	3
32 in. "Economic" .	130	300	40 0 0	24" x 5"	100	3½
24 in. Square "Rapid" }	124—130	200	30 3 0	18 x 3½'	110	3
32 in. Square "Rapid" }	151—170	300	48 0 0	24' x 5'	100	4
32 in. Circular } "Rapid" }	167	250	48 0 0	24" x 5"	100	4

NOTES ON ROLLERS.

The 24 inch "Economic" Brass mounted is fitted with brass box, brass lining and brass battens.

The 28 inches "Economic" similarly fitted costs £120 instead of £110.

The square "Rapid" rollers are now fitted up with rolling surfaces in 6 different ways.

They are called No. 1 Square "Rapid" original pattern.

- No. 2 remodelled.
- No. 3 with granite faced table.
- No. 4 brass mounted.
- No. 5 with granite top plate and under table.
- No. 6 with granite faced table and brass jacket.

(Agents for above MESSRS WALKER, SONS & Co, LIMITED.)

TEA ROLLERS.

Name.	Price.	Capacity	Weight.	Size of pulley.	Revs. per minute.	H. P.
BROWN'S.			C. qr. lbs.			
Triple Action large	£ 160	475	70 0 0	24 in.	120	4
Do medium	„ 125	350	55 0 0	24 in.	120	3
Do. small	. 90	175	40 0 0	18 in	120	1½

The rolling table on these may be in any form, but either the Law and Davidson patent dished table with brass clump battens or with patent brass circular battens is recommended. (Agents:—Colombo Commercial Co.)

Davidson's Sirocco Roller.	£ 130	350	C. qr. lbs. 11 2 0	18 in.	150	2
Perman's Express (Brown & Co)	Rs. 1575	300	C. qr. lbs. 20 0 0	26 in.	35	2½

SALMOND'S CRESCENT BATTENS.—Patent.

For 24 in. "Economic" and 24 in. "Rapid" Rollers.

Battens of Teakwood	...	...	...	...	Rs. 60·00
Solid Brass	.	..	...	...	„ 145·00

For 32 in. "Rapid"; Brown's Medium; 28 in. "Economic" and "Excelsior."

Battens of Teakwood	...	...	...	...	Rs. 70·00
Solid Brass	...	...	...	...	„ 175·00

Woodwork only for Tables, extra:—

For 24 in. "Economic" and 24 in "Rapid" Rollers	...	Rs. 50·00
32 in. "Rapid" Brown's Medium; 28 in. "Economic" and "Excelsior" Rollers	...	„ 75·00

(Agent:—MESSRS. BROWN & CO., LIMITED.)

ROLL BREAKERS.

Walker & Greig's ...	...	...	Rs. 325
Davidson, roll breaker, cooler and sorter		...	£36 sterling
The Colombo Commercial Co.'s ..		...	Rs. 300 d/d Colombo
Michie's patent (Walker Sons & Co.)		..	„ 450 in Kandy
Jackson's ..	...	...	£43 sterling
Souter's roll breaker (Brown & Co.)—small size		...	Rs. 275 at Hatton
Do do do large size			„ 350 ,
Brown & Co. s	...	..	„ 325 ,

GREEN TEA MACHINE.

DEANE & RAE'S PATENT.

	Capacity.	Weight.	Price.
Large size	225	10 cwts. 3 qrs	Rs. 600
Small size	... 100	7 cwts 1 qr.	„ 450
Hand Driven.—Full Instructions with each machine.—(Brown & Co.)			

THE TRIPLEX FURNACE.

(GIBBS & BARRY'S PATENT—BROWN & Co., SOLE AGENTS.)

This furnace can be fitted to any dryer, and is said to reduce the consumption of fuel very considerably.

The following is a short description of the principle on which it works:—

“A fan sucks the hot gases, air, smoke, &c., from the fire place over ordinary coral lime, and in doing so all the smoke is consumed, *i. e.*, converted into useful heat, so that nothing but perfectly pure heated air, mixed with a certain proportion of Carbonic acid gas is conveyed direct from the fire place on to the tea, the same as in the old system of chula firing.

The action of the Carbonic acid gas on the tea is such that it prevents the essential oil from being oxidised and evaporated.

This is proved by the fact that the tea during the process of firing gives off no aroma, the oil being still fixed in; instead of being evaporated from the leaf, as is the case of other dryers.

The fuel consumption is 40 to 50 per cent. less than any other furnace. This economy is due to the fact that the heat from the fire is conveyed direct, on to the tea, without having to heat the air through a long row of pipes or Cast Iron flues.

As in chula firing leaf fired in this furnace should improve or keep its flavour for some months after manufacture, before it begins to deteriorate again.

The cost of erection cannot be given here as the gearing for the fan, &c., must differ in every factory and with the different types of dryers.

DRYERS.

Name.	Price.	Made Tea per hour.	Weight. T, cwt. q. lbs.	Size of Pulley.	Revs. p.m.	H. P.
Davidson's Siroccos. Original No. 1 ...	£ s. d. 95 0 0	40	3 5 0 0	(No power required)		
8-Tray End Slide Sirocco with Combined Air and Smoke Chimney ...	110 0 0	60	3 15 0 0	do	do	do
8-Tray Slide Drawer Sirocco with Combined Air & Smoke Chimney ...	120 0 0	60	3 15 0 0	do	do	do
12-Tray End Slide Sirocco with Combined Air and Smoke Chimney ...	130 0 0	85	4 17 0 0	do	do	do
12-Tray Slide Drawer Sirocco with Combined Air & Smoke Chimney ...	140 0 0	85	4 17 0 0	do	do	do
16-Tray End Slide Sirocco with <i>Vertical</i> Flue Air Heater ...	160 0 0	100	6 3 0 0	do	do	do
16-Tray End Slide Sirocco with <i>Multitubular</i> Air Heater...	180 0 0	100	7 12 0 0	do	do	do
16-Tray Slide Drawer Sirocco with <i>Vertical</i> Flue Air Heater ...	170 0 0	100	6 4 0 0	do	do	do
16-Tray Slide Drawer Sirocco with <i>Multitubular</i> Air Heater ...	190 0 0	100	7 14 0 0	do	do	do
20-Tray End Slide Sirocco with <i>Multitubular</i> Air Heater ...	200 0 0	100	7 19 0 0	do	do	do
20-Tray End Slide Sirocco with <i>Vertical</i> Flue Air Heater ...	175 0 0	100	6 7 0 0	do	do	do
20-Tray Cocoa Drier End Slide with <i>Vertical</i> Flue Heater ...	175 0 0	100	6 10 0 0	do	do	do
Large Downdraft Sirocco with <i>Vertical</i> Stove ...	210 0 0	165	6 13 0 0	8 in.	750	2½
Small Downdraft Sirocco with <i>Vertical</i> stove ...	170 0 0	120	5 6 0 0	8 in.	600	1¾
Large Automatic Sirocco complete with Smoke Fan, &c. ...	718 15 0	500	21 2 0 0	10½ in.	450	3

The above prices include packing and delivery F. O. B. outward Steamer at Birkenhead or Glasgow.

DESICCATORS.

Name.	Price.	Made Tea per hour	Weight. T. C. Q. lbs.	Size of pulley.	Revs. per minute.	H. P.
Brown's Desiccator.	£ s. d.					
No. 1 ...	94 0 0	80—100	3 11 0 0	6 in.	700—750	$\frac{1}{2}$
No. 2 ..	130 0 0	100—120	4 2 0 0	6 in	750	1
No. 3 ...	140 0 0	120—150	4 10 0 0	6 in	750	1 $\frac{1}{2}$

TEA DRYERS.

Name.	Price in Colombo	Made Tea per hour.	Weight. T. C. Q. lbs.	Size of pulley.	Revs. per minute.	H. P.
Jackson's.	£					
42 in. Venetian ...	168	80—90	4 9 0 0	6×2 $\frac{1}{2}$	550	$\frac{1}{2}$
72 in. Venetian ...	251	140	7 9 0 0	8×3	450	1 $\frac{1}{2}$
Paragon medium....	399	180—220	11 14 0 0	10×3 $\frac{1}{2}$	150	1 $\frac{1}{2}$
Paragon ...	495	240—320	14 7 0 0	10×4 $\frac{1}{2}$	450	2 $\frac{1}{2}$



SIFTERS,

Walker's made tea sifter 2 grades at a time 300 revs. a minute, pulley 9 × 3½	...	F. O. B. Rs. 487-50
Do 2 trays to sift 3 grades at a time	...	„ „ 590-00
Jackson's Rotary sifter	...	£ 45 sterling
Do Tea reducing Machine	...	„ 31 „
Do Eureka	...	„ 100 „
Do Self cleaning—new patent	...	„ 82 „
Davidson's Sirocco tea sorter	...	„ 62 „
Brown & Co.'s Premier sifter out-put 25,000 lbs. per month, Pulleys 9 × 4, speed 300 revs., weight 13½ cwts. h. p. nominal	...	Rs. 500-00
Do Centre drive spring tea sifter out-put 15,000 lbs. per month. Pulleys 9 × 3½, speed 240 revs. a min., weight 10 cwts., h. p nominal	...	„ 500-00
Walker & Greig's Sifter	...	„ 450-00
Michie's (Eastern Produce Company)	...	„ 150-00

Mr. H. Gordon Cuff has patented a system for Automatically removing Dust and Fannings from Hand-Sifted or cut teas. The Royalty is fixed at Rs. 12-50 for each factory adopting the system.

CUTTERS,

Davidson's Tea cutter and equaliser	...	£23 sterling
Do Tea cutting mill	..	£17 „
Elston's Cutter (fitted to Brown & Co.'s tea sifter)	..	Rs. 150-00
Do (fitted to Walker & Greig's sifter)	..	„ 200-00
Alley's Breaker-weight 2 lbs., outturn 400 lbs. per cooly a day	...	„ 12-50
Do Screw adjustments for tightening ordinary sieves	„	2-50
Oblong trays complete with any mesh (Brown & Co.)	..	„ 12-50
Jackson's "Invincible"	..	£25-15 d/d Colombo
Parnall's—(W. H. Davies & Co.) fitted for hand or power.		
Small, outturn 60 lbs. per hour	...	Rs. 175
Medium, „ 120 „ „	...	„ 250
Large, „ 210 „ „	...	„ 395

PACKERS,

Davidson-Maguire patent without feed hopper F. O. B. Birkenhead	...	£35
Feed hopper	...	£ 8
Davidson tea pellet compressing machine (Messrs. Davidson & Co.)	„	£14
Jackson's new patent, single £26, double C. F. I. Colombo	...	£47-10-0
Overhead gear extra (Messrs. Walker Sons & Co.)	...	£ 6-15-0

FUEL,

FUEL CONSUMPTION.

Average for engines and dryers of various types 49 cwt. or say 7 cubic yards to 1,000 lbs. made tea.

Dryers only 20 cwt. or 2½ cubic yards to 1,000 lbs. made tea.

Britannia dryer working 332 days consumed yards	...	675
Double Dessicator .. 293 .. ..	...	315
Crop 302,000 lbs.	...	990

= 3¼ yards to 1,000 lbs. tea.

72 inch Venetian	...	¾ lb. of wood to 1 lb. tea
Up-draft Siroccos	... 1½	.. .. 1 lb. tea
Down-draft „	... 1	.. .. 1½ lbs. tea
Automatic Sirocco	... 1	.. .. 2½ lbs. tea

1 cubic yard firewood = about 560 lbs.

4 .. yards „ = .. 1 ton

12 „ „ „ = „ 1 ton of coal for firing

1 lb. coal = 3 lbs. wood for firing

Wood varies considerably in weight—lightest 500 lbs. green wood up to 1,200 lbs. per cubic yard.

WOOD FUEL FOR TEA FACTORIES.

Best native hard woods, as used in Brick and Lime Kilns, are Gal-Mora (*Pometia cœmia*), Mora (*Nephelium Longana*).

CONSUMPTION OF WOOD FUEL.

D R Y E R S .

One cubic yard lbs. 1,000 of Tea
fired lbs. of tea. C. yards of firewood

(The following Estates use Water power):

Estate with 4 Desiccators output 448,000 lbs. per annum	...	183	5.46
Estate with 1 Sirocco, 1 Desiccator and Venetian Dryer, output 303,000 lbs.	... ..	182	5.50
Estate with 1 Britannia Dryer and 1 Desiccator, output 440,000 lbs.		270	3.70
Estate with same Dryers, as above output 215,000 lbs...	... ..	430	2.32

COAL vs. WOOD.

Record of Experiment to ascertain Relative Cost of Burning Coal and Firewood in a 14 H. P. Loco -
motive Marshall & Sons' Boiler.—H. K. R.

Fuel.	Number of days experiment.	FUEL.		MADE TEA.		TIME.		COST.	
		Total consumed lbs.	lbs. per day.	Total lbs.	lbs. per day.	Average hours per day fire was up.	per day.	per lb. of tea.	Price of fuel, per yard.
Wood ...	34	69,551	2,046	21,545	633	11:00	Rs. 6 75	cents. 1 06	Rs. 1.50 per ton.
Coal ...	20	13,302	665	10,125	506	10:35	10 27	2 03	Rs. 34.60

LIQUID FUEL.

Liquid fuel is the residue after the volatile naphtha and ordinary kerosine have been drawn off by distillation from the crude mineral oil as found in its natural state. Liquid fuel can be used in the furnace of any steam boiler after certain alterations, the cost of which is given at about Rs. 250⁰⁰. The fire grate is usually covered with fire bricks and the liquid fuel is blown into the furnace, by spray injections, steam being used to inject the spray.

It is therefore necessary, on starting to light a fire in the furnace with coal or wood, to get up a little steam to start blowing in the liquid fuel.

Messrs. Marshall Sons & Co., Gainsborough, England, have patented a Liquid Fuel Apparatus for use in connection with Jackson's Dryers.

The apparatus which consists of an air compressor of very simple construction with suitable air receiver, air pipes, furnace front and door, liquid fuel injector and cocks, also oil tank and supply pipes, is so constructed that with little trouble either liquid or solid fuel can be used.

The air compressor is belt driven, and may be placed anywhere near the shafting where it is most convenient to obtain the power, and the air under pressure can be conveyed to the receiver by suitable piping.

A Paragon Dryer is said to consume about seven gallons of liquid fuel per hour which would work out approximately $\cdot 40$ of a cent. per lb. of made tea.

Prices on application to Messrs. Walker Sons & Co., Agents.

A KELANI VALLEY ESTATE,

Cost per gallon in Colombo ...	...	...	...	cts. 12 ⁰⁰
Transport by rail (6th class rate)	...	...	...	,, 1 ⁴³
To Estate, return empties &c.	...	...	...	,, 1 ²⁴
Cost per gallon on Estate				cts. 14 ⁶⁷

A layer of coke or dry firewood cut small placed at the bottom of the furnace is necessary to maintain combustion.

A 10 H. P. Engine consumes per hour $6\frac{1}{4}$ gallons.

" " " " " $9\frac{1}{2}$ lbs. coke

One gallon liquid fuel turns out $17\frac{1}{2}$ lbs. made tea at a cost of

for oil 0⁸⁴ cts. per lb.

for coke 0¹⁶ " " "

1⁰⁰ cts. per lb.

If firewood is used instead of coke the cost would be 0⁰⁹ cts. per lb. less.

Gross weight liquid fuel 225 gallons = one ton.

Barrels tare $\frac{3}{4}$ cwt. each. Contents of a barrel average 45 gallons.

Being over 2,000 flash test, there are no restrictions with regard to its storage.



S. SILVA & Co.,

HAIR DRESSERS

TO

H. E. the Governor and Staff,

**SALOONS AT THE
BRISTOL BUILDINGS, C. O. H.,
and "TIMES BUILDINGS."**

IMPORTERS OF

***English, American and Continental Per-
fumery, including Mulhen's Rhine Violets,
No. 4711, Eau de Cologne. The finest per-
fumes in the world and toilet requisites.***

HAVE ALSO IN HAND A LARGE STOCK OF

Razors, Razor Strops, Hones, Brushes, Combs, Imitation
diamond mounted back and side Combs, Sponges, Pipes, Cigars,
and Cigarette Holders, Whanghu Canes, Peptone Wine, &c., &c., &c.
all of the best qualities.

IMPORTANT TO SMOKERS.

EAST INDIA CIGAR Company's
"CHALLENGE" Brand Cigars are the best and cheapest
 Cigars ever imported to **Ceylon.** Obtainable at

Mr. SILYA'S HAIR DRESSING SALOON, FORT.

A trial will convince that these Cigars are by far superior
 to those sold at double the prices.

Choicest and selected Tobaccos only used and with a view of
 introducing this brand in Ceylon, the prices have been greatly
 reduced, and we earnestly solicit all smokers to give us a trial.

PRICE LIST FREE.

Mild Indian Cigars with Sumatra Coverings

					Rs.	Cts.	
Imperators No. 1 in Boxes of	25	...	...	...	3	00	each.
Do. " 2 " "	25	...	...	...	2	75	"
Beaconfires " " "	25	...	...	...	3	00	"
Celestials, Specials " " "	25	...	...	...	2	75	"
Do. No. 1 " " "	50	..	...	...	3	75	"
Do. " 2 " " "	50	...	...	...	3	50	"
Do. " 3 " " "	50	...	...	...	3	00	"
Do. " 4 " " "	50	..	...	...	2	50	"
Glorianas, Specials " " "	25	...	...	...	2	75	"
Do. No. 1 " " "	50	...	...	...	4	00	"
Do. " 2 " " "	50	...	...	...	3	50	"
Do. " 3 " " "	50	...	...	...	3	00	"
Sirdar Rex " 1 " " "	50	...	...	...	4	00	"
Do. " 2 " " "	50	...	...	...	3	50	"
Do. " 3 " " "	50	...	...	...	3	00	"
Nelson's " " " "	50	...	...	...	3	50	"
Chokras " " " "	100	...	...	...	3	50	"
Luxuries " " " "	50	...	...	...	3	75	"
Camerons " " " "	50	...	...	...	4	50	"
Commanders " " " "	50	...	...	...	2	75	"
Sumatra Chetputs " " " "	100	..	...	...	4	00	"

PURE INDIAN CIGARS.

Nationals No. 1 in Box of	50	...	...	...	2	75	"
Do. " 2 " " "	50	..	...	...	2	50	"
Dawsons " " " "	50	...	...	...	2	75	"
Indian Chetputs " " " "	100	...	...	...	3	25	"

CHARCOAL,

(HOW TO MAKE, F. L.)

There are several methods, but the chief object is the same in all—to produce as much pure wood-carbon as possible with a minimum of ash, and an absence of smoke when burned in air.

The most simple plan is to cut a pit about 8 feet×6 feet×6 feet deep, and in it to place the wood in even lengths placing each piece over the next like cigars in a bundle, taking care to allow space about the middle of the pile in which to lay dry match wood, and wood chips. This is best done while the pile in the pit is being made, a sufficient space being left at that end of the pit best suited for igniting the pile.

As soon as the wood in the pile is filled in, up to about a foot from the level of the mouth of the pit, the wood should be most carefully covered with a layer of green leaves, closely laid over the wood. Over this again earth should be put down, but before final closing a small vent hole is left.

The match wood is next lighted, and if the vent arrangement is well made, the fire soon spreads to the wood.

The surface of the pit must be watched to check any show of escape of flame or smoke by further addition of soil over the point of leakage.

The time taken for the whole mass to be reduced to charcoal varies very much according to quality of wood and regularity of packing, it may therefore be 36 hours or a third of that time in a state of combustion. This is easily found by removing some of the soil covering the top. If smoke or flame escapes it is evident that the work of combustion is incomplete and must still go on. After all signs of fire or smoke have ceased, the covering matter may be removed and water sprinkled over the mass of Charcoal wood, which should by then be perfectly burned and "clean."

To secure the best results, pile together wood of the same kind. If woods of different sorts are mixed, it will be found that one lot is perfectly burned, and the next not touched, because the two different kinds do not carry the same proportion of water, and until the water is driven out by heat, the Charcoal cannot be formed.

The hardest woods as a rule give the best results, as they contain a smaller quantity of water bulk for bulk than soft woods. It follows therefore that the dry-zone timbers are best adapted for Charcoal making.

The following well-known woods are suitable for Charcoal —

WET-ZONE WOODS.

Doon, Yakkahalu, Nah, Wannaidala, Gallis, Kampotta, Gangmi, Polang Bokera, Netanu, Panukera, Ankenda, and Maditiya.

DRY AND INTERMEDIATE-ZONE WOODS.

Mora, Ketukela, Kon, Palu, Wira, Katu-kandu, Mara, Niralu, Ehalu, and Gamalu.

The proportion of weight of Charcoal to weight of wood cannot be laid down with certainty, as it is very variable, but an average of 3 bushels of Charcoal to one cubic yard of wood may be expected, and in many cases exceeded, in the case of wet-zone woods, and considerably more from dry zone timber.

Note.—A cooly can burn 80 lbs. Charcoal per day



EXPERIMENTS WITH COAL,

Mr. A. E. Wright's Experiments with Coal in Davidson's Improved 8 tray T Sirocco at
New Brunswick Factory, 1888.

Date of Experiment.	Amount of Wood used to get up heat	Heat of Sirocco before putting in Coals.	Time of putting Coals on fire.	Time of drawing Coals.	Average heat of Sirocco during Experiment.	Consumption of Coal per hour	Amount of Coal consumed.	Amount of Tea made.	No of hours firing.	Average amount of Coal consumed per lb. of made Tea.	REMARKS
1888	lb	degrees.		p. m	degrees	lb.	lb.	lbs	hours.	lbs	
Sept. 21	112	160	12:30 p.m	6:30	210 to 235	19½	11½	22½	6	52	
25	109	150	11:30 a.m	6:30	220, 245	22	151	256	7	60	
			Sirocco	Bloom field			161	261	7	61	The coals used for these experiments were very small and dusty, else results would have been more favourable.
Oct. 1	70	150	11 a.m.	6:30	170 to 200	23	161	261	7	61	Cost of coal per ton R45 on Esste.

NOTES.

MANUFACTURE.

ROLLING TEA.

Hard rolling gives strength, but will show little tip. For a hard wither a hard roll is necessary. Hard rolling destroys flavour of small leaf, and improves strength of large.

Light rolling is preferable for fancy teas.

If sap comes too quickly in rolling, it shews leaf required more withering.

Roll should be sifted through a breaker and course leaf re-rolled.

DRYING TEA.—(Cameron.)

Drying in the sun gives a black and tippy tea.

Tea dried in the sun cups out with a metallic taste; coloring and softening go on rapidly over slow fires, and are checked by all-aglow fires.

Quick firing gives a brisker tea than slow firing. The roll spread too thickly on firing trays gets stewed and dull.

Final firing develops "nose" or aroma.

Drying in the sun before packing completely desiccates the tea, but gives it a peculiar flavour.

TEA TASTING.—*Tea Planters' Vade Mecum.*

IN valuing Tea the following characteristics should be noted :

1. **LIQUOR.**—Whether strong, rasping, pungent, brisk, flavory, full, thick, malty, dark, or wanting in strength, dull, insipid, thin, burnt, soft—judged by taste.

2. **INFUSION.**—Whether bright or dull color, or mixed with green, or any dark or burnt leaves, over, or underfermented—judged by sight.

3. **LEAF.**—Its make and appearance, whether black, wiry, even, regular, good, well twisted, flaky, bold, tippy or grey, dusty, little or badly twisted, open twisted, irregular, wanting in tips, &c.—judged by sight.

4. Any distinctive characteristics it may possess, viz.: "nose" strong rich scent, or musty, burnt, highly fired, dull, &c.—judged by smell.

HOW TO INFUSE CEYLON TEA.—(Bamber.)

To obtain the maximum amount of Aroma and Theine and minimum percentage of Tannin.

1. See that the water to be used is fresh.
2. Bring quickly to the boil. and not allow all air to be expelled by prolonged stewing over the fire.
3. Heat the tea pot with a little boiling water or by standing near the fire
4. Put the required quantity of tea into the hot tea pot just before the water boils, and keep hot.
5. Pour on the hot water immediately it boils. *i. e.* when the steam issues from the kettle with force
6. Cover the tea pot. and keep hot either on a stove. or by means of a cosy.
7. Infuse the leaf for five minutes, and then either drink at once, or pour the infusion into a second heated tea pot : or a tea pot with an internal infuser can be used with advantage, the infused leaf being removed at the end of five minutes.
8. Where an ordinary tea pot is used, stirring for a moment before use will improve the colour of the infusion, but the pot must be quickly recovered to prevent loss of the aroma.
9. On no account should a second brew be obtained from the same leaves.

TO USERS OF TEA.

Keep the tea protected from the atmosphere or damp.

Very "hard" water makes thin infusion.

Softening water, by adding soda, spoils the tea aroma, though it darkens the liquor

One pound of good Ceylon pekoe will turn out about 120 cups of tea.

One pound of Ceylon Tea will produce $7\frac{1}{2}$ gallons of liquid ; while one pound of China will only produce 5 gallons of liquid, of a like depth of colour and fulness of flavour.

1.—TABLE SHOWING COMPOSITION OF TEA FROM THE TYPICAL ESTATES.

(BAMBER'S SOIL REPORT.)

	Spring-wood.	St. Leonard's on Sea.	Doon-vale.	Bandarapola.	Attabagie.	Pantiya.	Dunedin.	Penylan.
Moisture ...	7.56	7.54	9.75	2.40	12.60	7.76	6.56	6.75
Extractive (in 5 minutes) ...	30.42	31.20	29.57	39.50	30.16	33.20	34.94	33.56
Total ash ...	6.10	5.84	5.90	5.33	5.55	5.53	5.62	5.84
Soluble ash ...	3.50	3.28	3.90	3.21	3.96	4.00	3.96	3.89
Insoluble ash ...	2.60	2.56	2.00	2.12	1.59	1.53	1.66	1.95
Essential oil ...	Nil	trace	trace	trace	trace	trace	trace	trace
Tannin ..	9.66	9.24	7.17	8.59	11.34	13.50	11.31	8.85
Boheic acid ...	5.72	4.88	5.20	4.36	6.20	2.80	5.50	4.95
Theine ...	3.06	3.66	3.55	3.65	3.49	3.46	3.86	3.98
Soluble Theine ...	1.16	1.46	1.14	1.68	3.09	1.48	2.32	1.62
Gummy Matter...	.72	.94	1.14	.64	1.55	.85	.96	.89
Total Nitrogen ...	3.90	3.54	3.36	4.32	3.44	3.60	3.50	3.64

2.—TABLE SHOWING THE COMPOSITION OF TEA FROM THE TYPICAL ESTATES.

(BAMBER'S SOIL REPORT.)

	North Pundaluoya	Elkadua	Galaha,	Carolina	Laxapana	Elston	El Teb.	
							Fine.	Coarse.
Moisture ...	7.60	6.85	7.68	5.16	5.26	7.56	8.60	7.40
Extractive (in 5 minutes) ...	30.41	33.42	33.00	39.42	36.41	34.40	28.00	32.00
Total ash ...	6.00	5.45	5.97	5.70	5.89	4.97	5.20	5.20
Soluble ash ...	3.96	3.33	3.10	3.41	3.51	3.08	3.02	3.12
Insoluble ash ...	2.04	2.12	2.87	2.29	2.38	1.89	2.18	2.08
Essential oil ...	trace	trace	trace	fair	fair	fair	trace	trace
Tannin ...	13.02	8.64	11.97	10.10	10.08	10.08	10.50	12.60
Boheic acid ...	6.06	4.96	5.32	5.22	5.37	5.00	4.76	4.94
Theine ...	3.83	3.67	3.88	3.94	3.89	4.20	4.02	3.98
Soluble Theine ...	1.23	1.37	1.36	1.45	1.37	1.93	1.51	1.32
Gummy Matter ...	1.36	.75	.85	.96	.87	1.03	1.02	.96
Total Nitrogen ...	3.96	4.06	3.00	3.36	3.84	3.64	3.05	3.00

3.—TABLE SHOWING THE COMPOSITION OF TEA FROM THE TYPICAL ESTATES.

(BAMBER'S SOIL REPORT.)

	Darra-wella.	Glen-Alpin.	Lunugalla.	Drayton	Loolecondera.	Kandapolla.	Hauteville.	Campion	St. Leonards.
Moisture	7.45	6.96	4.56	4.68	4.20	3.22	3.70	3.40	9.50
Extractive (in 5 minutes)	35.00	36.67	36.05	38.54	33.40	43.40	36.00	44.75	40.95
Total ash	6.26	6.02	5.64	6.09	5.85	5.30	6.20	5.94	6.00
Soluble ash	3.82	4.70	3.33	4.76	3.21	3.52	3.22	3.71	3.94
Insoluble ash	2.44	1.32	2.31	1.33	2.64	1.78	2.98	2.23	2.06
Essential oil	trace	fair	fair	fair	fair	good	good	good	food
Tannin	12.80	12.50	12.77	13.01	10.08	11.76	12.60	12.91	9.80
Boheic acid	4.66	5.20	5.16	5.02	5.16	4.00	4.35	6.10	5.42
Theine	3.98	3.98	4.00	4.11	3.95	4.21	4.35	4.20	3.96
Soluble Theine	1.92	1.55	1.64	1.84	1.20	2.21	1.74	1.86	1.88
Gummy Matter	.79	1.07	.89	.69	.85	.75	.94	1.22	.87
Total Nitrogen	4.01	4.00	3.22	4.16	3.78	3.64	3.67	3.91	4.89

TEA ANALYSES.

DR. B. H. PAULL, F. C. S. Consulting Chemist. March, 1887.

Tea Sample.	Price.	(1) Total Extract per cent.	(2) Total As- trimgency relative.	(3)		(4)		(5) Theine per cent. in dry leaf.
				Ordinary Extract per cent.	Infusion. Astrin- gency relative.	Astrin- gency relative.		
Broken Pekoe ...	1/8½d.	40.34	133	15.70	105	4.81		
Pekoe ...	1/2½d.	42.18	131	15.05	97	4.11		
Orange Pekoe ...	1/10½d.	44.64	128	13.09	111	4.89		
Pekoe ...	1/5½d.	41.04	128	16.36	86	4.74		
Broken Pekoe ...	1/2d.	42.64	117	13.74	79	3.95		
Pekoe ...	1/0½d.	41.44	100	15.70	100	3.86		
Pekoe Tips ...		57.00	168	18.32	183	4.62		
Assam Pekoe ...	7½d.	41.60	103	21.60	80	4.35		
.. ..	1/8½d.	45.36	150	10.47	116	4.43		
China ...	7d.	32.00	67	13.74	47	3.50		
.. ...	11¼d.	40.00	99	15.05	76	3.63		
.. ...	1/3d.	40.00	103	14.10	75	3.78		

It does not appear that it is always the case that tea yielding a thick liquor contains a larger amount of extract than tea yielding a thin. The actual amount of material extracted by water from tea leaves does not vary to the same extent as other characteristics, such as flavor and effect on the palate. Hence it is evident that the differences in tea are due much less to differences in the amount of material extracted, than to the character of that material in different instances.

(P E L I G O T ,)

Perfectly dried tea at 110° centigrade.

In 100 parts Pekoe	...	...	6.58	Nitrogen
.. Gunpowder	...	...	6.62	..
.. Souchong	...	...	6.15	..
.. Assam	...	...	5.10	.

(H U G H E S .)

In 1,000 lbs. Ceylon Teas as sold there are about the following : —

Nitrogen	...	45 lbs.	...	Phosphoric acid	8 lbs.
Potash	...	22 "	...	Lime	... 2½ ..

AVERAGE COMPOSITION OF CEYLON TEA.

(B A M B E R .)

Moisture	...	...	3.50 %
Total Ash	...	...	5.50 %
Extract	...	...	41.09 %
Insoluble	...	...	54.00 %
Theine	...	...	3.80 %

TEA SIFTING.

METHOD OF SIFTING TEAS FOR THE LONDON MARKET.

One estate. Plucking medium fine. Yield 600 lbs. per acre. Heavily manured and closely plucked tea.

Percentage of small bulk 60 %—small, black, broken, few tips } very hard
 Percentage of large bulk 40 %—wiry, small in size } rolled.

Brown Rae sifter—long trays—thin wire meshes Nos. 8, 14 and 40.

Small Bulk.—Through No. 10 hand sieve first = B. P. from which dust is removed by No. 30.

Above No. 10 is then put through the sifter.

Above No. 14 is put through a No. 10 hand sieve with an Alleyn's breaker = O. P. and D. The O. P. is mixed with what has fallen through No. 14.

Above No. 8 is put through No. 8 hand sieve with an Alleyn's breaker = P. and D. Dust is removed by No. 30.

Large Bulk.—Start with the sifter.

Above 14 is put through No. 10 hand sieve with the breaker = P. and D. and above No. 8 is put through a No. 8 hand sieve with the breaker, also = P. and D. Dust is removed by No. 30.

Outturn per cooly including the picking over of red-leaf = 175 lbs. of cleaned, graded and sifted tea per cooly. Excluding red leaf pickers, 300 lbs. of tea per cooly can be easily obtained.

Percentages—B, P.	...	30 %	...	sold @ 12.01 season 1900
" O. P.	...	35 %	...	" 9.44 "
" Pekoe	...	32 %	...	" 7.99 "
" Dust, &c.	...	3 %	...	" 5.75 "
		<u>100 %</u>		" <u>average 9¼d. per lb.</u>

Note.—1. In sifting the bulk with a No. 10 hand sieve; the sieve must not have too much leaf on it, and must be moved backwards and forwards without knocking. The smaller flat broken leaf should sift down through the sieve and the wiry leaf remain on top of the sieve to be taken into the O. P. when sifted afterwards on the machine.

2. The addition of the larger broken leaf of the small bulk through No. 8 on the machine sieve, improves the liquor, and does not deteriorate appearance of the O. P. It may however be sold as a B. P. separately.

3. The leaf should be fed on slowly and hardly handled at all on the machine sifter.

4. Fannings are not separated as the teas are made for the London Market. The B. P. is a thick liquoring fanny tea without tip suitable for blending. O. P. is wiry and of good appearance with a certain amount of strength of liquor. Pekoe is small in size and even.

TEAS SIFTED FOR THE LOCAL MARKET,

ONE METHOD-HAND SIFTING.

Bulk through No. 12 = O. P.— B. P. and D.

B. P. removed by a No. 11 and Dust by No. 40.

Above No. 14 is put through No. 8 and the result cleaned through No. 14 to remove fannings and dust which are separated by No. 10.

Above No. 8 is then broken through No. 8. There should not be very much of this.

Result :—B. P. 16 %, O. P. 42 %. P. 25 %. Balance 17 %. Average in Colombo 44 cents.

Note.—A cooly will sift 100 lbs. a day

AVERAGE COST OF TEA PACKAGES COMPLETE ON THE ESTATE.

Full size chest : 24 in. × 19 in. × 19 in = 80 to 100 lbs.

Cost of Chest (Shooks)	...	...	Cts. 107 00
Lead, 4½ lbs at Rs 17 per cwt.	...	...	„ 68 26
1½ in. Nails, 3 ozs. at Rs. 12·50 per cwt.	...	...	„ 2·07
¾ in. Nails, 1½ ozs. at Rs. 12·50	„	...	„ 1·04
½ in. Hoopiron, 7 ozs. at Rs. 12	„	.	„ 1·62
Solder, 08 lbs. at cents 60 per lb.	..	.	„ 1·80
Soldering Fluid	...	...	„ 19
Joining and Fixing up	...	.	„ 10·00

Average Tare = 28½ lbs or 24 per cent of gross ... Rs. 1·97

Half Chest : 17 in. × 17 in. × 17 in. = 40 to 50 lbs.

Cost of Chest (Shooks)	...	...	Cts. 85·00
Lead, 3 lbs. at Rs. 17 per cwt.	...	...	„ 45·51
1½ in. Nails, 2½ ozs. at Rs. 12·50 per cwt.	...	...	„ 1·72
¾ in. Nails, 1½ ozs. at Rs. 12·50	„	...	„ 1·03
½ in. Hoop iron, 6 ozs. at Rs. 12	„	...	„ 3·96
Solder, ·07 lbs. at cents 60 per lb.	...	...	„ 3·75
Soldering Fluid	...	...	„ ·17
Joining and Fixing up	„	...	„ 8·00
Average Tare = 20 lbs. or 30 per cent of gross			Rs. 1·49

Quarter Chest : 13 in. × 13 in. × 13 in. = 20 lbs.

Cost of Chest (Shooks)	...	...	Cts. 48·00
Lead, 1½ lbs. at Rs. 17 per cwt.	„	...	„ 22·75
1½ in. Nails, 2½ ozs. at Rs. 12·50 per cwt.	...	„	„ 1·55
¾ in. Nails, 1 oz. at Rs. 12·50	„	...	„ ·69
½ in. Hoopiron, 4½ ozs. at Rs. 12	„	...	„ 2·97
Solder, ·04 lbs. at cents 60 per lb.	...	...	„ 1·95
Soldering Fluid	...	...	„ ·15
Joining and Fixing up	...	...	„ 6·00
Average Tare = 11½ lbs. or 36 per cent of gross			Cts. 84·06

2 lb. packet in lead	...	...	„ 8·00
1 „ do do	...	...	„ 9·00
½ „ do do	...	...	„ 10·00

Packages are cheaper than above, when the timber for chests is obtained on or near the estate.

PACKING MATERIAL FOR 100 CHESTS OF TEA.

Lead.—84 in. × 22 in. in boxes of 2 cwt. 4½ oz.	Cwt.	qrs.	lbs.
lead, 64 sheets. (1½ sheets to each chest)			
100 chests = 2·31 boxes	...	...	4 0 2
20 cwt. net of lead = 21 cwts. 1 qr. gross...			
Solder.—44 sticks in a box of 28 lbs. 1 stick			
= 8 chests, 352 chests to a box of 28 lbs., 100 chests	0	0	8
To make solder 3 lbs. lead to 1 lb. block tin.			
Soldering Fluid—1 quart Baker's fluid =			
300 chests. 100 chests ¼ of a quart.			
Nails.—1½ in. No. 8,800 to 100 chests (44 to 1 lb.)	0	0	18½
¾ in. No. 3,600 to a 100 chests (42 to 1 lb.)	0	0	9
Hoop Iron.—½ in. 24 B. W. G. 2,500 feet = 1 cwt.			
100 chests = 1,300 feet	...	...	0 2 4
Note.—Shooks,—100 chests weigh	...	2,340	lbs.
100 ½ chests weigh	...	1,500	„
100 ¼ chests weigh	...	850	„

PACKING AND WEIGHING TEA.

Packages.—Should be made of well seasoned wood, with triangular battens in the angles nailed to the package from the inside with nails of sufficient length to enable them to be clenched on the outside; this greatly strengthens the package. A lining of good stout tea lead is necessary.

As freight is charged on the measurement, and buyers refuse all slack-packs, except at a reduction in price, it is important to well fill all packages, the tea being closely filled in but not crushed.

Factory Bulked Teas.—In the case of Estate bulked teas, care should be taken that the empty packages of any break should not vary more than 2 lbs. in weight. If the variation is more than this all the packages are turned out for the purpose of taking actual tares. Great attention should be paid to the packing as (even after the most careful bulking) irregularity in the appearance of the leaf due to this having been unevenly done, may necessitate rebulking in London.

Marks on Chest.—Nothing is wanted or is of any service beyond (1st) Garden Mark; (2nd) Description of Tea; (3rd) Garden Numbers; Gross, Tare, and net, are not of use.

Gross.—In taking the gross weight of packages exceeding 28 lbs., the Customs deduct all ounces over the even pound. The gross weights of 127 lbs. up to 127 lbs. 15 ozs. are taken as 127 lbs.

Tare.—In weighing the empty package for tare, fractions of less than half a pound are ignored, but a half pound or over is taken as a full pound, thus a tare of 28 lbs. 7 ozs. is taken as 28 lbs., one of 28 lbs. 8 ozs. or over as 29 lbs.

Net.—The net contents of the chest are never weighed, but are arrived at thus :—

	lbs. ozs.		lbs.
An actual gross weight of ...	127 6	gives a Customs weight of ..	127
Do tare do ...	27 5	do do ...	27
	<hr style="width: 50%; margin: 0 auto;"/>		
Giving a net of ...	100 1	or do do ...	100

The gross weight should in all cases amount to a few ounces over the even pound to guard against loss in transit. If the gross were weighed to the even pound in the factory and there were a loss on the voyage of only one ounce, this would mean a loss of one pound in London. Thus a factory gross of 127 lbs. losing one ounce in transit, would give no actual weight in London of 126 lbs., 15 ozs, and be taken by the Customs as 126 lbs.

The tare (that is the weight of the empty package including lid, nails and hoop iron) should weigh a few ounces below the half pound

The following are instances of how teas should turn out in London so as to avoid heavy loss :—

	lbs	ozs.			lbs.
Gross ...	127	4	=	Customs weight ...	127
Tare ...	27	4	,,	,,	27
Net ...	100	0	,,	,,	100 loss 1 lb. that is draft only.

Or :—

Gross ...	127	5	=	Customs weight ...	127
Tare ...	27	3	,,	,,	27
Net ...	100	2	,,	,,	100 loss including draft 1 lb. 2 ozs.

And not in the following manner where the loss would be heavy :—

Gross ...	127	13	=	Customs weight ...	127
Tare ...	27	9	,,	,,	28
Net ...	100	4	,,	,,	99 loss including draft 2 lbs. 4 ozs.

Or again :—

Gross ...	127	15	=	Customs weight ...	127
Tare ..	27	8	,,	,,	28
Net ...	100	7	,,	,,	99 loss including draft 2 lbs. 7 ozs.

DRAFT of 1 lb. per package on all packages grossing 29 lbs. and upwards is allowed to the buyer.

SIZE OF BREAKS.

LONDON.—All breaks of smaller quantity than :—

18 full chests	}	are considered small and sold at the conclusion of the sales.
24 half chests		
30 boxes		

COLOMBO SALES.

1,000 lbs. and over = large breaks. Under 1,000 lbs. = small breaks.

GREEN TEAS.

The manufacture of this is now being taken up in various Districts of the Island. All tea hitherto shipped from Ceylon has been of natural leaf and uncoloured by any artificial process. The tea manufactured is quite distinct from the Japanese grades and at present few estates are trying to imitate the Japanese teas in their manner of rolling and drying of the leaf, most tea shipped from Ceylon being fired and prepared in the usual manner similar to Black tea but without fermentation or withering. Care should be taken to see the leaf is not crushed or heated in the field. At present the grant allowed by the "Thirty Committee" for Green teas is on a sliding scale being regulated by the price of Black teas, in accordance with the following resolution passed by the "Thirty Committee" at a meeting on 9th November, 1901, which shows on what basis the bonus will be paid in future.

Resolved:—(1) That in view of the difference in price between Green and Black tea, a bonus be paid on a sliding scale on the first million pounds in addition to the present 5 cents sufficient to bring the price of Green teas to the parity of Black; (2) That a committee of three be appointed to fix, with the advice of an expert, the bonus for one month ahead, based on the average of three or four representative lowcountry properties, the bonus not to be under 5 cents without the consent of the "Thirty Committee"; (3) That all teas passed on or after the 15th November, do come within the operations of the above resolutions; (4) That the sub-Committee do consist of Messrs. Stanley Bois, G. Hathorn, and Duncan W. H. Skrine.

The following are the figures on which the grant has been paid by the "Thirty Committee" and the amount of bonus:—

Since October 1898 to 31st December 1901 there has been paid Grant on 2,161,923 lbs. of Green Teas as under:—

299,356 lbs.	...	at 10 cents per lb.	...	Rs. 29,935.60
999,601 "	"	at 7 " "	"	" 69,972.07
720,923 "	"	at 5 " "	"	" 36,046.15
142,043 ..	"	at 6½ " "	"	" 9,232.76
2,161,923 lbs.				Rs. 145,186.58

From January to June, 1902, the bonus has been 5 cents, and has been paid on upwards of 2,000,000 lbs.

All Teas have to be passed in Colombo by the "Thirty Committee's" Tea Experts for this grant

GREEN TEA.

It is now established that there is ONLY ONE WAY of making Green Tea, whether coloured (so-called "true" green tea) or uncoloured, economically on a commercial scale, and that is by the

DRUMMOND DEANE PATENT PROCESS.

The Latest Development of the process combines the advantages of the Ceylon and Indian systems of Green Tea manufacture. While preserving the purity of cup and uniformity of out-turn characteristic of the Deane steamed teas, and the ability to handle leaf in large bulk possessed by the Deane machines, the Indo-Ceylon or

DEANE-JUDGE PROCESS

by the interposition of a new machine (the Deane-Judge "Strainer," patent applied for) now running in Indian factories, adds the great advantage of rolling and treating the leaf in a dry state, resembling withered leaf, thus dispensing with the most troublesome operations in the original process and greatly economising fuel, labour and time. By lightening the work, the Deane-Judge "Strainer" greatly reduces the amount of rolling and firing accommodation necessary.

Testimonials to the Drummond Deane
and Deane-Judge

GREEN TEA PROCESSES.

From the *Indian Planters' Gazette*, 16th and 23rd August, 1902 :—"Both India and Ceylon have now woken to the fact that the salvation of their industries depends largely on their producing more greens and less blacks. The

[Continued over.]

necessary apparatus for so doing is ready at hand, the Deane-Judge machines turning out greens *to perfection* on a commercial scale, only needing the subsequent process of panning to put a greenish hue on them, if required coloured. The new Deane-Judge machine (the Strainer) saves a lot of labour and expense. To cut the matter short the latest Deane-Judge machinery answers all requirements."

From Mr. Robert Hart, Managing Director of the Baracoora Tea Company, Ltd., (Sylhet, India) under contract with the Indian Tea Association to produce 360,000 lbs. of 'true' green tea during 1902;—"The Drummond Deane Strainer is an excellent machine *and suitable in the manufacture of 'true' greens as well as the others*" (*Home and Colonial Mail*, July 18, 1902. q.v.)

FINISHING, POLISHING AND PANNING MACHINES.

It having been established that a higher price is to be obtained for Green Teas panned and finished to the grey-green colour and appearance of the green teas of China and Japan, the inventors have devised a simple and effective apparatus whereby this process may be mechanically effected. In the "Judge-Deane" Finishing and Panning Machine for Green Teas the maturing effect of the Indian and Far Eastern system of panning by gentle heat is preserved, at the same time as the Finished or Polished appearance is brought up on the dry leaf. The heated Panning effect is most beneficial to the teas as it improves their keeping qualities and matures their liquors and being in the nature of a final firing, the teas may be packed straight away from the machine, avoiding any further recourse to the Dryers. The "Judge-Deane" Panning and Finishing Machine is made in sizes to suit varying requirements, and the prices are exceedingly moderate and will suit all who are in search of a *cheap finishing process*.

Full particulars and rates may be obtained on application to

Mr. CHARLES JUDGE.

Mr. H. DRUMMOND DEANE.

5/1, Council House Street,

Stagbrook Estate, Peermaad,

CALCUTTA.

TRAVANCORE.

MR. H. DRUMMOND DEANE'S INSTRUCTIONS FOR MAKING GREEN TEAS.

FOR EXCELSIOR ROLLER AND TWO 8-TRAY SIROCCOS.

1. Warm the machine by turning on full steam for half a minute. Then place 200 lbs leaf in the machine (freshly gathered) and with 20 to 25 lbs. steam in the boiler, steam for 2 to 3 minutes; with 40 lbs. steam, 1½ to 2 minutes is sufficient.

The cylinder should never be filled more than on a level with the two steam pipe nozzles at a time, or the leaf will not be evenly steamed. If more leaf is wanted to fill the rollers, it can easily be steamed while the first lot is being put in the roller. The cylinder must be turned round slowly by coolies.

2. When the requisite amount of leaf is in the roller, put on full weight and stand a cooly on top without working the roller for two minutes; this will get rid of most, if not all the water caused by steam, and this must be thrown away. The leaf, before going into the roller, should be perfectly flaccid.

3. Roll five minutes without weight, and throw away that water or juice; then roll ten minutes half weight; then pour back the juice from this roll into the roller, and roll five minutes with hardly any pressure, so as to retain as much juice as possible.

1. Put this semi-rolled leaf on to Sirocco temperature about 260 degrees—and fire for about twenty-five minutes, passing the trays backwards and forwards pretty smartly, and turning the leaf as the trays come out. At the end of this time the leaf should begin to turn an olive green, and feel quite gummy, and be no longer wet.

5. Take the semi-fired leaf from the Sirocco and put back in roller. Roll five minutes lightly, five minutes hard, and five minutes medium, then break roll (in Souter's breaker); be careful after breaking thus, whether by breaker or by hand, to thoroughly break up the balls or clots into which the Tea forms. I greatly recommend a Souter's breaker.

6. The leaf being thoroughly broken up, replace in Sirocco. and with temperature of 230 to 260, fire for about 15 minutes until the leaf is like chamois leather—soft, with a tendency to getting crisp. but yet not crisp.

7. Roll again: first five minutes hard, and then about five minutes more, lightly, to get twist, then break roll once more. and finish by final firing at a temperature of 200.

The sieves I used for my break were Nos. 12 and 10, and the balance broken through a No. 8. All the fannings must be most carefully taken out as well as the dust. What Tea will not go through an "8" can be broken up and mixed with the fannings.

I named the Teas :—

No. 1	New Season's Extra Choicest Green Tea.
No. 2	do Choicest Ceylon Green Tea.
No. 3	do Choice do do
No. 4	do Green Tea Fannings.
No. 5	do do Dust

and headed the Invoice with the words "Ceylon Uncolored Green Teas."

MANUFACTURE OF GREEN TEA.

IN DEHRA DOON.

The method of manufacturing green tea in the Dehra Doon district for the Central Asian market is as follows :—

Manufacture can be commenced as soon as the leaf is plucked, but as it is more convenient to manufacture a day's plucking at once, the leaf plucked during the day is allowed to be all night in the leaf shed, spread out from two to four inches deep, and is constantly turned over to prevent heating.

The process of manufacture is as follows :— A large iron *karai* or pan 36 in. in diameter by 12 in. deep, is heated almost red hot, and when ready is filled with green leaf, which is rapidly turned about to prevent burning, until it has become quite soft, and the mass reduced to about half its former size. This process takes about three minutes. It is then thrown on the rolling table and while the next panful is being prepared, is rolled by the tea-makers. As the leaf is perfectly soft and flaccid, the rolling is done in the same time as the panning takes. If there is any sun, the rolled leaf is then thinly spread out in it until it becomes a blackish green and is very sticky to the touch or if cloudy, is put in *chalnies* over charcoal fires until in the same condition. It is then put into smaller iron pans 25 in. in diameter by 12 in. deep, which are only heated to such a degree that the hand cannot be kept on the iron. These pans are about half filled, and the leaf is kept turning over until it has become quite soft again, when it is again rolled. When the day's batch has all been rolled a second time, the small pans are filled to the brim, the heat being gradually lowered, and the leaf is cooked, being constantly turned about as before for about four hours, when it is almost dry to the touch. If a large quantity of the two classes of gunpowder are required, it is then screwed up in bags but this is not necessary nor indeed advisable at present, as the gunpowders do not bring the same prices as

Young Hyson and Hyson, a quantity of which classes become gunpowder in the screwing. The tea may now be left for weeks in the bins before being classed and coloured, but we will suppose that the next process takes place next morning. The small pans should be heated to the extent of burning the hand if kept on the iron for a short time, and about half filled with the tea, which is worked rapidly from side to side until it assumes a light greenish tint, which will take about an hour and-a-half. It should then be classed, fanned and picked. Before being bagged for market, about the same quantity is put into the pans, heated to the same degree as before and is again worked rapidly to and fro for about two hours until it had assumed all the bloom it will take,—usually a whitish green; but if the leaf is hard and old when plucked, the colour will turn out yellow green, and will require colouring matter, usually pounded soapstone. It is in this last panning that the colouring matter is put in, but I believe the Europeans in this district do not use it unless requested to do so by the native buyers. It is easily detected by taking a handful of unadulterated tea and breathing on it, when it will be found that as the damp dries off the bloom will return, but will entirely disappear in adulterated tea. The tea is then packed hot in 200 lb. bags composed of an inner cloth and an outer gunny bag, and is despatched in this state to market. In heating the pans, wood is always used, as it is quite as efficient as, and much cheaper than charcoal.

IN ASSAM.

The following method of making green tea in Assam is furnished by an old tea planter:—In making green tea, the flush, *i.e.*, the bud and first two leaves of the young shoot, after being picked and weighed, is carried at once into the factory, and large iron pans, twenty-five inches in diameter, and five inches deep, fixed in brick-work over hot wood fires, are piled up with the fresh leaves. The operator in charge then rapidly turns the leaves round, at first with his hand, but afterwards, when the leaves get too hot, with a couple of pieces of wood, like large spoons, until they become perfectly flaccid. The contents of the pans are then thrown out on the rolling table or if machinery is used into the rolling machine, and thoroughly rolled with a sort of figure-of-eight motion until every individual leaf has become twisted and lost some of its sap. The leaf is then taken and spread out thinly on sheets in the sun, or if there is none, as is often the case in the manufacturing season, on fine wire gauze or bamboo trays over charcoal fires, until it turns a greenish-black, and becomes very sticky to the touch. It is then transferred to the rolling tables or machine, and gets a few minutes rolling to retwist any of the leaves that may have been uncurled, and is then put into deep iron pans, measuring thirteen inches in diameter by nine in depth, fixed like the large ones, but slightly sloping forward, in brick work

over furnaces, in which there is a hot fire. A man stands opposite each pan which is filled full, and the mass is turned over and over slowly for about three hours, when it has become almost dry. It is then put into long narrow bags, which are filled as full as possible, and then screwed up tightly, this operation having the effect of turning a large quantity of the larger and coarser leaves into gunpowder, and thereby enhancing their value. Next day the bags are opened, and the contents—exactly resembling in appearance the Carrigan moss used in Ireland in boiling linen—transferred to the storing bins, where the tea will keep in this state for a long time. To complete the process, as soon as the factory hands have leisure, a slow fire is lighted in the furnaces under the deep pans, which are filled about one-third, full of the unfinished tea, and an operator then proceeds to work the tea to and fro in each pan with his bare hand as hard as ever he can for about an hour, until the combined friction and heat have caused each individual particle of tea to assume the beautiful green bloom that distinguishes green from black tea. It is at this point that the Chinese colour their teas with foreign substances, as, unless the tea has been made from young succulent leaf, it will now appear of a dirty yellow colour, instead of being greyish-green. I never knew Indian green tea to be adulterated with any deleterious colouring matter, although we have sometimes been asked by the Central Asian merchants to put a little ground soapstone in to give the deep green colour that their customers appreciate.

After this colouring process the tea is sieved into different classes and is then ready for packing. It is usually put into 200 lb cloth and gunny bags as it does not require lead-lined chests like black tea.

Green tea-making, although taking a longer time than black tea, is a comparatively simple process, and does not require the anxious attention which must be given to the manufacture of black tea to make one a successful manager.

IN JAPAN.

The following explains the mode of preparation of green tea in Japan :—
“ The firing and preparation of tea for market, as practised in Japan, is as follows :—The Japanese green tea may be divided into three general classes ; coloured, uncoloured, and basket fired. The leaf used for all these is from the same plant, differing only in quality, condition, etc. All teas used by foreigners are first fired by the natives in the places where grown. If a grade of coloured tea is to be made, this fired leaf (four or five pounds) is taken and put into iron pans or bowls, which are heated sometimes up to a temperature of 212° Fahrenheit. The leaves are then rapidly stirred by hand against the smooth iron surfaces some twenty minutes. A teaspoonful of thoroughly pulverised soapstone (saponite) and five grains, or so, of powdered

Chinese indigo are placed in the pan, and thoroughly rubbed into the leaf for about 20 minutes more, when half a teaspoonful of soapstone or gypsum and pulverised tamarack bark (a species of larch) is added, and the stirring and rubbing is continued for 20 minutes more. It is then put into cold pans and simply cold rubbed against the iron surfaces until it has the required polish, which is arrived at in from 40 minutes to an hour. This is the ordinary way of preparing coloured tea. Other materials are perhaps sometimes used, but, so far as I can learn, all are as harmless as the one mentioned. The different manufacturers, of course, vary the process a little now and then to produce slight changes of colour. The leaf is then run through three to five sizes of sieves, till all the dust and loose colouring matter is separated. The shrinkage is about 12 per cent. This colouring process is considered beneficial to the leaf, tending to preserve its shape and flavour. There can be no doubt that the Japanese prepared teas are far superior in purity to the Chinese. In colouring Chinese teas various drugs are used that are deleterious to health, unless it be that the heat to which they are subjected render them innocuous. Prussian blue is frequently used instead of indigo in their green, and black lead in their black teas. Uncoloured teas are made in the same way and quantities, and rubbed against the iron pans until the surfaces have the desired polish, and are then sifted until nothing but the whole leaves are left. Basket-firing is done in bamboo baskets, shaped something like our hour-glasses, which are shaken over hot pans. The leaf is put into the upper lobe of the basket and worked into the lower, and so, back and forth, until finished. The loss of weight is about 3 per cent."—*The Planter*.

GREEN TEAS.

Olongs consist of tea leaves withered either artificially or naturally by hot air or on hot plates, sufficiently to enable them to be rolled, when they are straightway fired.

The result of this process is that the effect called by some fermentation and by others oxidization is partially produced, and this effect prevents the leaves from being uniform in colour and causes them to vary from an olive green to a light brown.

TRUE GREEN TEAS are made only of leaf which has never been fermented or oxidized, and when infused should show a uniform yellowish green colour which could never be obtained had either oxidization or fermentation taken place. The production of these teas has hitherto been found impracticable in Ceylon because leaf could not be rendered sufficiently soft or pliable to be rolled or twisted unless by its being withered either naturally or artificially by hot air or hot plates, which withering is in itself a degree of fermentation or oxidization.

RUSSIAN TEAS.

Prices range in St. Petersburg and Moscow from Roubles 1'05 = 2s. 1d. per lb. to Roubles 1'60 = 3s. 2d. per lb., taking the value of the rouble at 2s.

Russian custom is equivalent of 1s. 8½d. sterling per Russian lb., which is 10 per cent less than an English lb.

Freight on tea from Colombo to Odessa is 30s. per 1,000 lbs. net and from Colombo to Moscow is 90s. per 1,000 lbs. net. per steamers of the Russian Volunteer Fleet.

The Russian import duty is Roubles 21 gold per pood on the European frontier, and Rbbs. 24 at Ports Vladivostok and Nikolaevsk, which equals about 1/8½ per English pound, or 87½ Russian kopecks per English pound. The duty in Finland is Rbbs. 16'39 per pood for black tea, and Rbbs. 12'29 for green tea.

The Russian pood equals 36 $\frac{1}{10}$ English pounds. The English pound equals 1'107 Russian pounds. There are 100 kopecks in a rouble.

SOME MINOR POINTS CONNECTED WITH THE RUSSIAN TEA TRADE.

At present there are no brick teas made in Ceylon for the Russian Market. For brick teas to be introduced into Russia with the minimum Custom rate, they must be made and manufactured by a factory worked by a Russian firm. otherwise Customs duty as charged to Foreign Houses is very much higher.

Tea sent in packets can only be sold if it is entirely repacked in Russia under official supervision

No tea should be sent to Russia for general consignment sale.

As almost all the Ceylon tea is used for mixing with a leafy China tea, the Ceylon teas used must be of a similar leaf, and there is no demand for broken teas. The Russian tea although packed in packets is not pressed down and broken, as in the case of most English packet teas.

The regulation which necessitated paper being placed between the tea and the lead in all chests entering Russia, has been rescinded, but a few of the importers still continue to use such paper.

It is practically necessary that all chests sent into Russia should be covered withessian or sacking, as the usage they are subjected to is of the roughest kind.

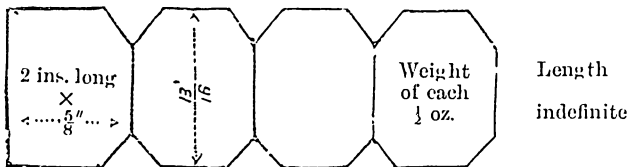
Russian buyers prefer Japanese or Venesta chests and therefore country-made chests should be avoided.

Teas may be sent in bond to Moscow by any of the routes, and the duty is payable there when the teas are removed. Teas for St. Petersburg may also be sent in bond by land—as they often are in winter—and the duty is collected at St. Petersburg when the teas are cleared.

The Russian currency is now on a gold basis, and gold coins are in every day use. To a foreigner the distinction between a rouble in gold and a rouble in paper is still a little puzzling. In practice with one exception, there is but one kind of rouble, worth a little over two shillings. The one exception is the Customs duties, the rates of which are printed in an obsolete value of a gold rouble which is represented in the rouble of to-day by an additional 50 per cent. Ten roubles gold therefore, means fifteen roubles. Unfortunately the gold coins in use have on the earlier minted ones this obsolete value marked upon them, while the ones now being issued have the real every-day value. You may therefore have two gold coins of precisely the same size and character, the one marked 10 roubles, the other 15. Both for general use are worth the latter sum.

BRICK TEAS.

Full-sized diagram of Brick Tea.



RUSSIAN CUSTOMS.

Translation of section 20 of the Russian Customs Tariff. Official edition of the Department of Customs of the Imperial Ministry of Finances, printed in 1894 :—

Tea of all kinds imported at the European Custom Houses pay duty Roubles 21—gold per pood (of 36 lbs. English).

OBSERVATION.— Tea of all kinds imported through the Irkutsk Custom House and at those south of it over the Siberian and Steppe Region frontiers pay a duty :—

(a). On Baikhoff black, flower, green, and yellow teas 13 Roubles gold per pood.

(b). On Brick teas, Roubles 2·50 c. gold per pood. and

(c). On teas in slabs accompanied by Consuls' certificates, as to their being prepared in Russia and with the names of Russian fabricants on each slab. 10 Roubles gold per pood.

Tra-xao (Bu-hao) literal translation from the Chinese—little white hairs. 'Traxobou rau (Baihovoi tea) was originally the name given to flowery teas with perfectly white tips. Later on all teas passing through Kiachta get the name of Baihovoi.

PLANTATIONS.

The following is the estimated quantity of tea grown in the Batoum district during the following years :—

	Popoff,		Solovtzeff.		Russian Gov.
	lbs.		lbs.		lbs.
1897	... 720	...	180	...	—
1898	... 5,040	...	360	...	—
1899	... 12,600	...	9,000	...	—
1900	... 18,900	...	34,200	...	5,580
1901	... 64,800	...	50,400	...	22,140
1902	... 86,400	...	61,200	...	52,920

VENESTA CHESTS,

(AGENTS :—Colombo Commercial Company.)

PACKAGES,	OUTSIDE DIMENSIONS.			CAPACITY.	Weight complete with 2 oz. Venesta metal lining.	PRICES C. I. F. COLOMBO.			
						With 2 oz. Venesta metal lining.		With 4 oz. lead lining and solder.	
	in.	in.	in.	lbs.	lbs.	s.	d.	s.	d.
" C. " Pattern, with white metal edges ...	20	20	24	110	18	3	7	3	11
Do do ...	19	19	24	110	17	3	5	3	9
Do do ...	19	19	22	110	16	3	3	3	7
Do do ...	16	16	20	60	12	2	7	2	10
" A. " Pattern, with Clasps ...	12	12	13	21	6	1	2	1	3

1d. per chest reduction on "C," pattern with Black Metal Edges.

2d. do do "D," do do do

APPLIANCES REQUIRED FOR MAKING UP PATENT VENESTA CHESTS.

Bench Tops, 8 ft. by 2 ft. 6 in., fitted with 2 Iron Plates.

c. i. f. Colombo ... 30/- each

Iron Plates and Screws for fitting to Bench Tops where

they can be made at the Tea Factories ... 5/- per pair

Iron Mandrils for closing the last joint .. 2/6 each

Iron Mandrils fitted to solid Wooden Horn ... 5/- each

Hammers for driving rivets ... 1/- each

(HATTON AGENCY.)

	Hatton.	Kotagala.	Kotiyagala.
	Rs. cts.	Rs. cts.	Rs. cts.
20 x 20 x 24 ...	283 70	287 00	291 00
19 x 19 x 24 ...	273 70	277 00	281 00
19 x 19 x 22 ...	258 70	262 00	266 00
16 x 16 x 20 ...	208 70	211 00	214 00
12 x 12 x 13 ...	118 70	120 00	123 00

These are only supplied in lots of 100 packages complete with all necessary Nails, Rivets, Fittings, &c.

ORDINARY CHESTS,

SIZES OF PACKAGES.

Outside Measurement.	Cubic ft.	Capacity lbs.
24 in. × 19 in. × 19 in. = ...	5·013	... 80—100
17 in. × 17 in. × 17 in. „ ...	2·675	... 50—60
13 in. × 13 in. × 13 in. „ ...	1·271	... 20
10 in. × 10 in. × 10 in. „ ...	0·578	... 10
8 in. × 8 in. × 8 in. „ ...	0·300	... 5
8 in. × 1½ in. × 1½ in. „ ..	0·093	... 2
5 in. × 4 in. × 4 in. „ ...	0·046	... 1
5½ in. × 3½ in. × 3½ in. „ ...	0·039	... ½

Full chests and half chests will hold 10 % more if packed with a Davidson-Maguire packer.

COLINDIA TEA CHESTS.

These packages consist of six ¼ inch Vencer boards of Maple 3 ply and cemented together. *i.e.*, 2 sides 24 in. × 17½ in.—2 ends 19½ in. × 17½ in. 2 top and bottom 24 in. × 20 in. (making a chest with an outside measurement of 24 in. × 20 in. × 18 in. = 5 cubic feet) and 12 battens.

Printed instructions and sketch are supplied on application to the local agents—Messrs. Walker, Sons & Co. The price is Rs. 2·35 per chest in Colombo and the rail freight to Talawakelle about 9 cents per chest.

OTHER CHESTS.

Size.	Capacity.	Cost.	
Japanese 24 × 19 × 19	80—100	cts. 97	}
Do 17 × 17 × 17	50—60	.. 80		Ex Godowns, Colombo
Foochow 24 × 19 × 19	80—100	Rs. 1·00	}
Do 17 × 17 × 17	50—60	.. 0·90		Brown & Co., Hatton
Country 24 × 19 × 19	80—100	.. 0·90	}
Do 17 × 17 × 17	50—60	.. 0·75		Up-country

Approximate number of full chests filled, to a shipping. ton = ten

Do half do = seventeen

1 ton shipping = 50 cubic feet.

Do = about 917½ lbs. tea.

TRANSPORT.

TRANSPORT FROM COLOMBO.				Rs. cts.
To Avisawella (by cart)	...	...	per ton...	12 00
„ Ruanwella viâ Veyangoda (by rail and cart)	..	„	„ ...	11 50
„ Dehiowita (by cart)	...	...	„ ...	12 50
„ Yatiantota „	...	...	„ ...	12 50
„ Panawal Korale (by cart)	...	...	„ ...	17 50
„ Ratnapura „	...	...	„ ...	22 50
„ Ratnapura (by boat)	...	...	„ ...	12 50
„ Ratnapura rice (by cart)	...	...	per bushel...	0 30
„ Rakwana rice „	...	...	„ ...	1 12
„ Rakwana tea packing &c. (by cart)	...	...	per cwt ..	1 50
„ Rakwana manure „	...	...	per ton...	26 67
„ Balangoda rice „	...	...	per bushel...	1 00
„ Balangoda tea packing „	...	...	per cwt...	1 50
„ Monaragala from Hambantota rice (by cart)	...	...	per bushel ..	0 80
„ Monaragala from Hambantota sundries (by cart)	...	...	per ton...	28 00
A cart can carry	...	..	15 chests	
Do do	...	...	20½-chests	
A padda boat	..	...	100 to 150 chests	
A railway waggon (small)	...	...	64 chests	
Do do (large-Bogie)	...	...	128 chests	

TEA TRANSPORT. WATER CARRIAGE.

From Putupaula (Kalutara) to Colombo by Kaluganga river and canal, distance 40 miles.	cts. per lb. net.
Per full chest 18 cts. Per half-chest 12 cts. ...	22
From Yatiantota by river, to Colombo, distance 46 miles	50

ROAD AND RIVER CARRIAGE.

Balangoda to Colombo :—			
83 miles by road, or other route	}	..	... 1'00
27 miles by road and 78 by river			
Rakwana to Colombo :—			
85 miles by road, or other route	}	...	... 1'00
29 miles by road and 78 by river			
Ratnapura to Colombo :—			
78 miles by river	...	...	... 50

RATES FROM THE PASSARA DISTRICT.

To Bandarawella by cart. Full chest 50 cents. Half-chest 40 cents.

RATES FROM MONARAGALA.

To Colombo Stores, viâ Batticaloa 2'00

RATES FOR THE CONVEYANCE OF PARCELS FROM COLOMBO TERMINUS.

TO	Distance.	Rates for parcels from Colombo Terminus										
		Not over 7 lbs.	Over 7 lbs., not over 14 lbs.	Over 14 lbs., not over 21 lbs.	Over 21 lbs., not over 28 lbs.	Over 28 lbs., not over 42 lbs.	Over 42 lbs., not over 56 lbs.	Over 56 lbs., not over 70 lbs.	Over 70 lbs., not over 84 lbs.	Over 84 lbs., not over 98 lbs.	Over 98 lbs., not over 112 lbs.	28 lbs. or part when over 1 cwt.
	M. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.	Rs. c.
Wharf	3	04	0	0	0	0	0	0	0	0	0	0
Maradana Junction	8	14	0	15	0	20	0	25	0	30	0	35
Kelaniya	5	21	0	15	0	20	0	25	0	30	0	35
Hunupitiya	9	00	0	10	0	15	0	20	0	25	0	30
Regama	16	59	0	10	0	15	0	20	0	25	0	30
Heneratgoda	22	54	0	10	0	15	0	20	0	25	0	30
Veyangoda	30	54	0	15	0	20	0	25	0	30	0	35
Mirigama	34	15	0	15	0	20	0	25	0	30	0	35
Ambepussa	40	24	0	15	0	20	0	25	0	30	0	35
Alawwa	45	34	0	20	0	25	0	30	0	35	0	40
Polgahawela	52	74	0	20	0	25	0	30	0	35	0	40
Potuhera	58	12	0	20	0	25	0	30	0	35	0	40
Kurunegala	65	00	0	20	0	25	0	30	0	35	0	40
Rambukkana	70	46	0	25	0	30	0	35	0	40	0	45
Kadugannawa	71	23	0	25	0	30	0	35	0	40	0	45
Peradeniya Junction	75	37	0	30	0	35	0	40	0	45	0	50
Peradeniya	77	71	0	30	0	35	0	40	0	45	0	50
Kandy			0	30	0	35	0	40	0	45	0	50
Mahaliyawa			0	30	0	35	0	40	0	45	0	50
Katugastota			0	30	0	35	0	40	0	45	0	50

RATES FOR THE CONVEYANCE OF PARCELS FROM COLOMBO TERMINUS,—Contd.

TO	Distance.	Not over 7 lbs.		Over 7 lbs., not over 14 lbs.		Over 14 lbs., not over 21 lbs.		Over 21 lbs., not over 28 lbs.		Over 28 lbs., not over 42 lbs.		Over 42 lbs., not over 56 lbs.		Over 56 lbs., not over 70 lbs.		Over 70 lbs., not over 84 lbs.		Over 84 lbs., not over 98 lbs.		Over 98 lbs., not over 112 lbs.		28 lbs. or part when over 1 cwt.						
		M.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.			
Wattegama	81	79	0	30	0	55	0	65	0	75	0	85	1	10	1	30	1	50	1	80	1	90	0	55	1	90	0	55
Ukuwela	88	18	0	30	0	60	0	70	0	85	0	95	1	20	1	45	1	70	2	00	2	15	0	60	2	15	0	60
Matale	91	55	0	30	0	60	0	70	0	85	0	95	1	20	1	45	1	70	2	00	2	15	0	60	2	15	0	60
Gampola	78	26	0	30	0	55	0	65	0	75	0	85	1	10	1	30	1	50	1	80	1	90	0	55	1	90	0	55
Ulapane	82	75	0	30	0	55	0	65	0	75	0	85	1	10	1	30	1	50	1	80	1	90	0	55	1	90	0	55
Nawalapitiya	87	29	0	30	0	60	0	70	0	85	0	95	1	20	1	45	1	70	2	00	2	15	0	60	2	15	0	60
Galboda	94	38	0	50	0	90	1	10	1	35	1	55	1	90	2	25	2	60	3	00	3	35	0	90	3	35	0	90
Watavala	100	13	0	50	0	90	1	10	1	35	1	55	1	90	2	25	2	60	3	00	3	35	0	90	3	35	0	90
Rozella	103	63	0	50	0	90	1	16	1	35	1	55	1	90	2	25	2	60	3	00	3	35	0	90	3	35	0	90
Hatton	108	16	0	50	0	90	1	10	1	35	1	55	1	90	2	25	2	60	3	00	3	35	0	90	3	35	0	90
Kotagala	111	25	0	50	0	90	1	10	1	35	1	55	1	90	2	25	2	60	3	00	3	35	0	90	3	35	0	90
Talawakele	115	69	0	60	1	10	1	30	1	45	1	65	2	10	2	55	2	90	3	50	3	65	1	10	3	75	1	10
Watagoda	120	09	0	60	1	10	1	30	1	45	1	65	2	10	2	55	2	90	3	50	3	65	1	10	3	75	1	10
Nanu-oya	128	06	0	70	1	20	1	40	1	65	1	85	2	40	2	85	3	30	3	90	4	15	1	20	4	65	1	20
Ambawela	137	08	0	70	1	30	1	50	1	85	2	05	2	60	3	15	3	70	4	30	4	65	1	20	5	15	1	40
Ohiya	143	33	0	70	1	40	1	70	2	05	2	25	2	90	3	45	4	00	4	80	5	15	1	40	6	55	1	60
Haputale	153	43	0	80	1	60	1	90	2	25	2	45	3	10	3	75	4	30	5	20	5	55	1	60	7	55	1	60
Diyatalawa	156	76	0	80	1	60	1	90	2	25	2	45	3	10	3	75	4	30	5	20	5	55	1	60	7	55	1	60
Bandarawala...	160	58	0	80	1	60	1	90	2	25	2	45	3	10	3	75	4	30	5	20	5	55	1	60	7	55	1	60

GOODS RATES PER TON.

From Colombo	Terminus To	1st		2nd		3rd		4th		5th		6th	
		class.	Rs. cts.	class.	Rs. cts.	class.	Rs. cts.	class.	Rs. cts.	class.	Rs. cts.	class.	Rs. cts.
Wharf	1 38	1 00	0 76	0 63	0 55	0 49					
Ragama	4 00	2 75	1 95	1 50	1 25	1 05					
Henaratgoda	6 63	4 50	3 14	2 38	1 95	1 61					
Veyangoda	8 88	6 00	4 16	3 13	2 55	2 09					
Mirigama	11 88	8 00	5 52	4 13	3 35	2 73					
Ambepussa	13 38	9 00	6 20	4 63	3 75	3 05					
Alawwa	15 63	10 50	7 22	5 38	4 35	3 53					
Polgahawela	17 50	11 75	8 07	6 00	4 85	3 93					
Potuhera	20 13	13 50	9 26	6 88	5 55	4 49					
Kurunegala	22 38	15 00	10 28	7 63	6 15	4 97					
Rambukkana	20 13	13 50	9 26	6 88	5 55	4 49					
Kadugannawa	24 63	16 50	11 30	8 38	6 75	5 45					
Peradeniya Junction	26 88	18 00	12 32	9 13	7 35	5 93					
Peradeniya	27 25	18 25	12 19	9 25	7 45	6 01					
Kandy	28 38	19 00	13 00	9 63	7 75	6 25					
Katugastota	29 50	19 75	13 51	10 00	8 05	6 49					
Wattegama	31 00	20 75	14 19	10 50	8 45	6 81					
Ukuwela	33 63	22 50	15 38	11 38	9 15	7 37					
Matale	34 75	23 25	15 89	11 75	9 45	7 61					
Gampola	29 88	20 00	13 68	10 13	8 15	6 57					
Ulapane	31 38	21 00	14 36	10 63	8 55	6 89					
Nawalapitiya	33 25	22 25	15 21	11 25	9 05	7 29					
Galboda	36 60	24 48	17 94	12 73	10 55	8 49					
Watawala	39 30	26 28	18 16	13 85	11 65	9 37					
Rozelle	40 78	27 27	19 29	14 53	12 35	9 93					
Hatton	43 02	28 76	20 46	15 45	13 25	10 65					

GOODS RATES PER TON,—*Contd.*

From Colombo	Terminus To	1st		2nd		3rd		4th		5th		6th	
		class.	class.	class.	class.	class.	class.	class.	class.	class.	class.	class.	class.
		Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.	Rs. cts.
Kotagala	...	44	41	29	69	21	21	16	05	13	85	11	13
Talawakele	...	46	36	30	99	22	29	16	93	14	75	11	85
Watagoda	...	48	60	32	48	23	46	17	85	15	65	12	67
Nanu-oya	...	52	32	34	96	25	46	19	45	17	25	13	85
Ambawela	...	56	50	37	75	27	71	21	25	19	05	15	29
Ohiya	...	59	39	39	67	29	29	22	53	20	35	16	33
Haputale	...	64	04	42	77	31	79	24	53	22	35	17	93
Diyatalawa	...	65	43	43	70	32	54	25	13	22	95	18	41
Bandarawela...	...	67	29	44	94	33	54	25	93	23	75	19	05
Moratuwa	...	3	61	2	49	2	00	2	00	1	65	1	37
Panadura	...	4	81	3	29	2	63	2	63	2	15	1	77
Kalutara South	...	6	97	4	73	3	75	3	75	3	05	2	49
Paigala South	...	8	17	5	53	4	38	4	38	3	55	2	89
Beruwala	...	8	89	6	01	4	75	4	75	3	85	3	13
Alutgama	...	9	61	6	49	5	13	5	13	4	15	3	37
Kosgoda	...	11	29	7	61	6	00	6	00	4	85	3	93
Balapitiya	...	12	49	8	41	6	63	6	63	5	35	4	33
Ambalangoda	...	13	21	8	89	7	00	7	00	5	65	4	57
Hikkaduwa	14	89	10	01	7	88	7	88	6	35	5	13
Dodanduwa	15	85	10	65	8	38	8	38	6	75	5	45
Gintota	...	16	81	11	29	8	88	8	88	7	15	5	77
Galle	...	17	77	11	93	9	38	9	38	7	55	6	09
Talpe	..	19	45	13	05	10	25	10	25	8	25	6	65
Ahangama	20	89	14	01	11	00	11	00	8	85	7	13
Weligama	22	09	14	81	11	63	11	63	9	35	7	53
Kam'gamuwa	...	23	29	15	61	12	25	12	25	9	85	7	93
Matara	...	24	25	16	25	12	75	12	75	10	25	8	25

RICE, TEA, TEA PACKING AND MANURE FOR
STATIONS ABOVE NAWALAPITIYA.

(SPECIAL RATES.)

Colombo to	Rice.		Tea.		Tea packing.		Manure.	
	Rate per ton.		Rate per ton.		Rate per ton.		Rate per ton.	
	Rs.	cts.	Rs.	cts.	Rs.	cts.	Rs.	cts.
Galboda	16	40	12	13	7	85	7	85
Watawala	17	42	12	88	8	33	8	33
Rozelle	17	93	13	25	8	57	8	57
Hatton	18	78	13	88	8	97	8	97
Kotagala	19	29	14	25	9	21	9	21
Talawakele	19	97	14	75	9	53	9	53
Watagoda	20	82	15	38	9	93	9	93
Nanuoya	22	18	16	38	10	57	10	57
Ambawela	23	71	17	50	11	29	11	29
Ohiya	24	73	18	25	11	77	11	77
Haputale	26	43	19	50	12	57	12	57
Diyatalawa	26	91	19	88	12	81	12	81
Bandarawela	27	62	20	38	13	13	13	13

Important Notice.—Rice, tea, and tea packing are conveyed over the Main Line above Nawalapitiya at the same rates per mile as charged on the Main Line below Nawalapitiya.

The special rates are applicable to any quantity only in the case of rice and tea, but the rate for tea-packing applies only to quantities not less than one ton,

RAILWAY FREIGHT ON TEA IN CHESTS,

Calculated on the basis of 1,680 lbs. of Tea to a ton of gross weight.

	cts. per lb.		cts. per lb.
Wharf ...	.. '03	Talawakele ...	.. '87
Ragama ...	.. '08	Watagoda ...	.. '91
Heneratgoda ...	.. '14	Nanu-oya ...	.. '97
Veyangoda ...	.. '18	Ambawela ...	.. 1'04
Mirigama ...	.. '24	Ohiya ...	.. 1'08
Ambepussa ...	.. '27	Haputale ...	.. 1'10
Alawwa ...	.. '32	Diyatalawa ...	.. 1'12
Polgahawela ...	.. '35	Bandarawela...	.. 1'21
Potuhera ...	.. '40	Moratuwa ...	.. '11
Kurunegala ...	.. '45	Panadura ...	.. '15
Rambukkana ...	.. '40	Kalutara South	.. '22
Kadugannawa	.. '49	Paigala South	.. '26
Peradeniya Junction	.. '54	Beruwala ...	.. '28
Peradeniya ...	.. '55	Alutgama ...	.. '30
Kandy ...	.. '57	Kosgoda ...	.. '35
Katugastota ...	.. '59	Balapitiya ...	.. '39
Wattegama ...	.. '62	Ambalangoda	.. '41
Ukuwela ...	.. '67	Iikkaduwa ...	.. '46
Matale ...	.. '69	Dodanduwa ...	.. '49
Gampola ...	.. '60	Gintota ...	.. '52
Ulapane ...	.. '63	Galle ...	.. '55
Nawalapitiya ...	.. '66	Talpe ...	.. '60
Galboda ...	.. '72	Ahangama ...	.. '65
Watawala ...	.. '76	Weligama ..	.. '69
Rozelle ...	.. '78	Kam'gamuwa	.. '72
Hatton ...	.. '82	Matara ...	.. '75
Kotagala ...	.. '84		

Extracts from the Rules for the Conveyance of Goods on the
Ceylon Government Railway.

Tea Packing.—Tea lead, hoop iron, nails, shooks, and other articles used for tea packing which are entered in classification for conveyance at sixth class rate, "if certified for tea packing" will be accepted for conveyance by rail in consignments of from 1 to 4 tons at sixth class rate on any week day.

Unhooped Tea Chests.—Wooden tea chests containing more than 60 lbs. of tea, which are not bound or hooped with iron. are accepted and conveyed at owner's risk only.

Timber Unwrought, including beams and rough planks sawn, but not planed or adzed. of such sizes as to admit of 3 tons being loaded in any ordinary wagon will, if sent in consignments of not less than 3 tons, be charged fifth class rate on actual weight, but if of less than 3 tons the freight will be charged at fourth class on actual weight, or at fifth class on 3 tons. whichever is the lesser amount.

Bulky or Heavy Articles.—(a). When two or more wagons are required for the conveyance of boilers, engines, girders, machinery, shafts, masts, logs, beams. and such articles as from their great length or weight cannot be carried in one ordinary wagon, the minimum charge will be as for 2 tons per wagon for first, second, third, and fourth class goods, 3 tons per wagon for fifth class goods, and 4 tons per wagon for sixth class goods; but should the freight, if calculated on 2 tons per wagon at third or fourth class rate, amount to less than for 3 tons per wagon for fifth class goods, or 4 tons per wagon for sixth class goods, the lower charge will be made.

(b). All bulky or heavy articles under this clause are conveyed at owner's risk, and the owners must provide the necessary tackle and labour to load and unload them.

(c). The usual loading and unloading charge of 25 cents per ton will be deducted from freight on such goods.

(d). All articles measuring more than 14 ft. in length, 7 ft. in breadth, or 7 ft. in height. will be charged as "bulky articles."

Small or Loose Articles.—If Coconuts, Arecanuts, Bones, Bottles, Shells, Chunks, Earthenware, Shingles, Staves. or other small articles are forwarded loose, a minimum charge will be made of 25 cents per wagon per mile over the Main Line below Nawalapitiya and over the Matale, Kurunegala and Coast Line Branches, and 50 cents per wagon per mile over the Main

Line above Nawalapitiya plus the usual loading and unloading charge of 25 cents per ton on the weight of the contents; and if delivery is not taken within the time allowed free after arrival, demurrage will be charged. If the freight calculated on actual weight amounts to more than the minimum the higher charge will be made.

Plants, Straw, Cadjans, Empties, and Packages of a Light or Frail Nature, Tea baskets excepted, requiring special accommodation *i.e.*, goods of which less than 2 tons occupy a whole wagon, will be liable to a minimum charge of 25 cents per wagon per mile over the Main Line below Nawalapitiya, and over the Matale, Kurunegala, and Coast Line Branches, and 50 cents per wagon per mile over the Main Line above Nawalapitiya; and if delivery is not taken within the time allowed free after arrival, demurrage will be charged.

Goods of the Sixth Class, in quantities less than 4 tons, to be charged as 4 tons, or at Third Class rate on actual weight.

Single and separate Parcels under 56 lbs. in weight will be accepted as Goods, and charged as for 56 lbs.

The fractional part of half a cwt. of Goods will be reckoned as half a cwt.

The minimum charge for a consignment of Goods is 25 cents.

When not specially provided, the minimum distance on which a mileage charge will be made is 10 miles.

The minimum charge for a Cattle truck will be Rs. 5.

Weights.—The Government do not hold themselves bound by any weights inserted by consignors or their consignment notes, as freight charges are calculated on the weights obtained, when necessary, by weighing on the weighing machines of the Railway Department; nor do they admit any responsibility in respect of the weights thus arrived at either as a basis of claim for shortage or as regards their absolute correctness as between buyer and seller. The weights taken on the railway weighing machines are merely for the purpose of determining the amount of the freight charges,

If the owner of Goods conveyed by railway should doubt the weight on which the freight charges have been based, the Goods will be re-weighed on payment of the re-weighing charge of 25 cents per ton. If the difference is found to be 56 lbs. or more per ton, the charge made for re-weighing will be refunded and the freight charges rectified. If the difference is less than 56 lbs. per ton, the original weight on railway invoice will be considered correct.

COLOMBO SALES.

COLOMBO SALES,

CONDITIONS.

1.—The highest bidder to be the purchaser; and any dispute that may arise to be settled by the Selling Broker, who is to declare the name of the bidder before the lot is knocked down. The seller of the tea or any agent employed by him or the auctioneer to have the right of bidding.

No mistake in the bidding can be rectified after the fall of the hammer.

2.—All teas to be sold by the lot at so much per pound. No less advance than ONE CENT to be made on any previous bid.

Should the number of packages in any lot prove on delivery to be more than 5 per cent. short of the number sold, or should the deficiency reduce the lot from a sampling to a non-sampling break, the buyer to have the option of cancelling the purchase.

3.—A deposit of ten per cent. to be made, if required, at the moment the lot is knocked down otherwise it will be put up again and re-sold immediately.

4.—Payment to be made on delivery, in cash, without discount, other than the amount levied as a cess at the Custom House on the export of Tea, in terms of Ordinance No. 4 of 1894, and delivery to be taken at Seller's stores within five days from date of sale, Sundays and Public Holidays excepted.

5.—Should payment not be made before noon on prompt day, the Seller to have the liberty, on giving notice in writing to the buyer, of re-selling the lot or lots at the risk of the buyer, who will be liable for all loss resulting from such re-sale.

6.—All objections as to quality, description, or packing must be made on or before delivery, and no objection can be admitted subsequent to prompt day.

Should packages be found in an unmerchantable condition by the Selling Brokers, same to be notified prior to sale.

“Any teas in packages over 28 lbs. gross, packed with lead under 4 oz. shall be so declared by the Selling Broker before selling.”

7.—The Selling Broker to open, inspect, and sample ten per cent. taken indiscriminately, of each break of Tea bulked on the estate and so marked, but not less than three packages of each description to be inspected and sampled. Provided the samples to be drawn are found similar and of equal quality, such sampling to be considered sufficient; but, should the quality be

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found to vary, every package to be opened and sampled. No sampling whatever to be done unless the entire lot has arrived and been subjected to the Selling Broker's inspection. Catalogues to state whether or not Teas are factory bulked and hooped. In the case of Teas not bulked on the estate every package to be opened and sampled. Trade samples in all cases to be drawn in accordance with this rule :

“ No Teas shall be catalogued until they have arrived, and all Catalogues shall be closed by 4 p m. on Friday. Samples and Catalogues to be delivered before 10 a.m. on Monday for the following Wednesday's sale.

8.—All Teas to be paid for on sale weights, less 3 lbs. sample allowance, but buyers subsequently to have the right, on giving notice before the expiration of the prompt day, of having the actual net weight ascertained. To ascertain actual net weights ten per cent. of each break, but not less than three packages, to be turned out and weighed, and the average result taken as representing the actual net weight of the Tea in each package of the break. Fractions of a pound to be disregarded. Sellers to provide scales and weights, and in the event of a difference in weight exceeding 1 per cent. being discovered to pay the cost of weighing. Such cost not to exceed 12½ cents per package. Any difference between sale and actual weights to be paid or allowed for, as the case may be. All packages to have the gross weight marked upon them before being offered for sale.

9.—The Tea to be at Seller's risk until noon on prompt day, unless previously removed from Seller's stores. After prompt day Tea remaining in Seller's stores to be at Buyer's risk and liable to rent at the expiration of 7 days from prompt date.

10.—Brokers buying or selling to declare in writing their principals immediately after the sale, or otherwise themselves to be held responsible as principals.

11.—Should any dispute arise between Buyer and Seller in the matter of quality, description, or packing, the same to be referred to arbitration.

12.—Additions or alterations to above rules may be made from time to time as occasion arises, at a General Meeting of the Colombo Tea Traders' Association to be called for such purpose in accordance with the rules of the Association.

AVERAGE PRICES OF CEYLON TEAS SOLD
IN COLOMBO,

		Offered.	—	Sold.		Average.
		lbs.		lbs.		cents.
1891	.....	13,921,376	.....	9,599,024	.....	40
1892	.....	15,022,441	.....	11,425,251	.....	41
1893	.....	19,190,669	....	14,246,430	.....	43
1894	.....	20,819,557	.. ..	15,788,343	.....	43
1895	.....	26,192,587	.....	19,668,116	.....	47
1896	.....	32,083,163	.....	25,412,624	.....	41
1897	.....	33,886,803	.....	26,512,099	.....	37
1898	.....	35,957,819	.....	28,866,004	.....	36
1899	.....	38,377,318	.....	32,482,040	.....	38
1900	.....	47,681,826	.....	38,442,926	.....	34
1901	.....	51,011,000	.....	39,160,923	.....	33.55
1902	.....		.....		.....
1903	.....		.....		.....
1904	.....		.....		.....
1905	.....		.....		.....



OCEAN FREIGHTS.

FOREIGN PARCEL AGENCY RATES.

LONDON AND COLOMBO FORWARDING AGENCY.

(ESTABLISHED 19 YEARS.)

For forwarding tea from Colombo to any address in the United Kingdom (Payable at either end.)

Net lbs.	5	10	20	40	50	90	100
Charges ...	...Rs. 2.50	4.50	7.00	11.00	12.00	17.50	21.00
Duty 6d. ex. at 1/4 ...	Rs. 1.90	3.80	7.60	15.20	19.00	34.20	38.00
	Rs. 1.40	8.30	14.60	26.20	31.00	51.70	59.00

Insurance to £5 value free. Rupees and cents for duty vary with exchange.

PARCEL POST SYSTEM.

(APPLICABLE TO TEA.)

BETWEEN CEYLON AND THE UNITED KINGDOM.

Parcels are received at all Post Offices in Ceylon for transmission by post to the United Kingdom, and to other countries *viâ* London.

Charges. —The postage charges to the United Kingdom are:—

By British Parcel Post Service (parcels not exceeding 11 lbs. in weight).

For the first 3 lbs.	...	Rs. 0.75
Above 3 lbs. and up to 7 lbs.	...	„ 1.50
Above 7 lbs. and up to 11 lbs.	...	„ 2.25

By P. & O. Company's service (parcels *above* 11 lbs. and not exceeding 50 lbs. in weight)—50 cents per lb.

ENGLISH PARCEL POST TARIFF.

Not exceeding 1 lb. gross	/3d.	.....	Not exceeding 6 lbs. gross	/8d.
Do 2 „ „	/4d.	.....	do 7 „ „	/9d.
Do 3 „ „	/5d.	.....	do 8 „ „	/10d.
Do 4 „ „	/6d.	.....	do 9 „ „	/11d.
Do 5 „ „	/7d.	.....	do 11 „ „	1/-

OCEAN FREIGHTS ON TEA.

1 Shipping Ton = 50 cubic feet.

= 917 lbs. of Tea in ordinary packages.

Rate per ton,	Exchange Per lb. of Tea.	1/5d. Cents.	1/4½d. Cents.	1/4d. Cents.	1/3½d. Cents.	1/3d. Cents.
20/	1.51	1.59	1.64	1.69	1.74
22/6	1.73	1.79	1.83	1.90	1.95
25/	1.92	1.98	2.01	2.11	2.17
27/6	2.11	2.19	2.21	2.31	2.39
30/	2.31	2.38	2.45	2.52	2.61
32/6	2.50	2.59	2.65	2.71	2.82
35/	2.69	2.78	2.85	2.91	3.04
37/6	2.88	2.99	3.06	3.11	3.26
40/	3.08	3.18	3.27	3.36	3.48
42/6	3.27	3.39	3.47	3.58	3.69
45/	3.46	3.58	3.67	3.78	3.91
47/6	3.65	3.79	3.88	4.00	4.13
50/0	3.85	3.98	4.08	4.21	4.35
52/6	4.01	4.19	4.28	4.41	4.56
55/	4.23	4.38	4.49	4.62	4.78
57/6	4.42	4.59	4.69	4.83	5.00
60/	4.62	4.78	4.90	5.04	5.23

Note.—There would be a saving of ten per cent. on above if “Venesta” packages were used.

FREIGHT FOR BOMBAY.

The price of freight for Bombay for tea is Rs. 10 per 50 cubic feet

***LONDON CHARGES, ACCOUNT SALES,
IMPORTS, AND EXPORTS.***

Table shewing total charges made up of Freight, Warehouse charges, Sale Expenses, Marine Insurance, Fire Insurance, Brokerage, Discount and Commission $\frac{1}{2}$ per cent, in pence on Teas from F. O. B. Colombo to sale in Mincing Lane, London. Freight at 30/ per 50 cubic feet.

PRICE OF TEAS.	In chs. 160 to		In chs. 130 to		In chs. 90 to		In hf-chs. 80		In boxes 45 to		In boxes 35 to	
	gross.	gross.	gross.	gross.	gross.	gross.	gross.	gross.	gross.	gross.	gross.	gross.
Pence.	charges & all	Frgt. Ins. & all	charges & all	Frgt. Ins. & all	charges & all	Frgt. Ins. & all	charges & all	Frgt. Ins. & all	charges & all	Frgt. Ins. & all	charges & all	Frgt. Ins. & all
	& Taring.	charges Taring only.	& Taring.	charges Taring only.	& Taring.	charges Taring only.	& Taring.	charges Taring only.	& Taring.	charges Taring only.	& Taring.	charges Taring only.
4	1-000	1-006	1-036	1-015	1-054	1-152	1-195	1-178	1-221	1-238	1-229	1-299
5	1-007	1-043	1-073	1-052	1-091	1-189	1-232	1-215	1-258	1-276	1-266	1-336
6	1-044	1-074	1-110	1-089	1-128	1-226	1-269	1-252	1-295	1-338	1-303	1-377
7	1-081	1-111	1-147	1-126	1-165	1-263	1-306	1-289	1-332	1-340	1-411	1-444
8	1-118	1-148	1-184	1-163	1-202	1-300	1-343	1-326	1-369	1-377	1-451	1-481
9	1-155	1-185	1-221	1-200	1-239	1-337	1-380	1-363	1-406	1-414	1-488	1-518
10	1-192	1-222	1-258	1-237	1-276	1-374	1-417	1-400	1-443	1-451	1-525	1-555
11	1-229	1-259	1-295	1-274	1-313	1-411	1-454	1-437	1-480	1-488	1-562	1-592
12	1-266	1-296	1-332	1-311	1-350	1-448	1-491	1-474	1-517	1-525	1-599	1-629
13	1-303	1-333	1-369	1-348	1-387	1-485	1-528	1-511	1-554	1-562	1-636	1-666
14	1-340	1-370	1-406	1-385	1-424	1-522	1-565	1-548	1-591	1-599	1-673	1-703
15	1-377	1-407	1-443	1-422	1-461	1-559	1-602	1-585	1-628	1-636	1-710	1-740
16	1-414	1-444	1-480	1-459	1-498	1-596	1-639	1-622	1-665	1-673	1-747	1-777
17	1-451	1-481	1-517	1-496	1-535	1-633	1-676	1-659	1-702	1-710	1-784	1-814
18	1-488	1-518	1-554	1-533	1-572	1-670	1-713	1-696	1-739	1-747	1-821	1-851
	Extra		cost		per lb. if teas		have to be		Bulked and		Tared.	
	030		030		039		043		043		045	
	030											

Charges increase, '037 for every penny in value per lb.

CHARGES ON TEA PER LB, FROM F. O. B. COLOMBO
TO REALIZATION OF PROCEEDS LONDON.

	Total Charges 1d at 1/4 Exchange.		Total Charges 1½d at 1/4 Exchange.	
	Pence.	Cents.	Pence.	Cents.
Freight	·276	1·835	·306	2·044
Marine Insurance	·047	·313	·072	·480
Fire Insurance	·014	·093	·039	·259
Warehouse Charges	·332	2·218	·362	2·424
Sale Expenses	·030	·199	·055	·319
Interest on Charges	·013	·092	·038	·270
Brokerage	·083	·552	·113	·752
Discount on prompt	·086	·572	·115	·765
Agency	·119	·792	·150	·990
	1·000	6·666	1·250	8·333

COLOMBO CHARGES,

Receiving at Railway or Boats and placing on board Steamer inclusive of Export duty at 10 cts. per cwt. and Harbour dues ... ..	... ..	·50 cts. per lb.
Special duty imposed by Cess Ordinance ... ..	... ..	·30 " " "
Total ... ..	... ..	·80 of a cent.

Harbour dues payable on tea when exported :—

For five days or under—on each box of tea on net weight as marked on each package.

For every 50 lbs. 3 cents

For every additional 50 lbs. or fraction thereof 3 "

Package or box of less weight 2 "

TEA CLEARING HOUSE.

IMPORTERS' CHARGES ON TEA.

To apply to all parcels by Ships reporting on and after 1st July, 1900, and to New Season's China Tea arriving prior to that date.

	PER PACKAGE WEIGHING GROSS.												Not exceeding 16 lbs.
	200 lbs. to 250 lbs.	160 lbs. to 199 lbs.	130 lbs. to 159 lbs.	90 lbs. to 129 lbs.	80 lbs. to 89 lbs.	60 lbs. to 79 lbs.	45 lbs. to 59 lbs.	35 lbs. to 44 lbs.	17 lbs. to 34 lbs.				
Landing and Housing Rate	s. d. 2 2	s. d. 1 10	s. d. 1 6	s. d. 1 2	s. d. 1 1	s. d. 1 0	s. d. 0 10	s. d. 0 8	s. d. 0 5	s. d. 0 5	s. d. 0 3	s. d. 0 3	s. d. 0 3
Management Rate	2 7	2 2	1 10	1 6	1 4	1 2	0 11	0 10	0 6	0 6	0 3	0 3	0 3
Bulking and Taring (as one operation)	1 10	1 7	1 4	1 2	1 0	0 11	0 9	0 6	0 5	0 4	0 3	0 3	0 3
Bulking, Taring, or Weighing net separately	1 5	1 2	1 0	0 10	0 9	0 8	0 6	0 5	0 4	0 4	0 3	0 3	0 3
Reshowing	1 10	1 7	1 4	1 1	0 11	0 10	0 8	0 6	0 5	0 4	0 3	0 3	0 3
Rent	0	0 1	0 0½	0 0½	0 0½	0 0½	0 0½	0 0½	0 0½	0 0½	0 0½	0 0½	0 0½

N.B.—The whole of the above charges are NET, with the exception of Rent, which is subject to 20 per cent. discount.

The rates are chargeable on the average gross weight of each break. When the fraction of the average weight is half-a-pound or more, the higher rate will apply. Thus: The average of a break being 79½ lbs. gross, the whole break will be rated at 80/89 lbs., but the average being less than 79½ lbs. the whole break will be rated at 60/79 lbs.

Tea Clearing House,

21, Mincing Lane, E.C.,

7th June, 1900.

By order,

GEO. T. POOCK,

Secretary.

TRANSHIPMENT CHARGES ON TEAS IN LONDON,

At London and India Docks Warehouses.	At Other Warehouses.
Lighterage = 4d. per chest ...	3d. per chest
" 3d. ,, ½ chest ...	2d. ,, ½ chest
" 1½d. ,, box ...	1d. ,, box
Marking 1½d. ,, package ...	1d. ,, 8 letters
Minimum Lighterage Charge Tilbury and other Docks £1 10s. ...	Tilbury £3 0s. 0d. Other Docks £2—£2 10s.
Customs Bond up to £5 value 3d. stamp.	
" " over £75 ,, maximum 5/ stamp.	
Clearing 2/6d. Bill of Lading 2/6d. Customs Officer 4d. per hour while in barge.	
This averages about 6/ per consignment. Examining for damage, weighing, coopering, &c., extra.	
Documents should be lodged immediately on ships arrival and delivery taken within 3 working days from the final landing of the parcel.	

LIGHTERAGE OF TEAS WITHIN THE DOCKS FOR SHIPMENT,

Per ton 2/6d.

Minimum charge at London or St. Katherine's Dock ... per barge 10/.	
At all other Docks ...	... ,, 30/.

AUSTRALIAN TEA TRADE,

SYDNEY CUSTOMS.

Bonded Warehouse Charges.

	Rent.	Receiving and Delivery including cartage from Quay to Bond.
On Chests	¼d. per package per week	.. 2½d. per chest.
½ ,,	½d. per package per week	... 1½d. per ½ che-t.
¾ ,,	¾d. per package per week	... 1d. per ¼ che-t.
1 ,,	1½d. per package per week	... ½d. per ¼ che-t.
Boxes	⅙d. per package per week	... ½d. per box.

The Custom House weigh teas net usually "stripping," *i. e.*, weighing net, one chest in a "Chop." If a large one, they may "strip" 3 in 100. Teas are sold on C. H. weights only. Factory marks are as a rule erased. Except for repairing and stripping only the Rent, which starts at once, and the receiving and delivery rates as above are incurred. There is no bulking done in Bonded warehouses and there is no draft allowance.

TEA TARING REGULATIONS,

GENERAL ORDER 42/1900.

Custom House, London, May 23th.

1. The Board direct that on and after June 1st, 1900, in taring, whether separately or for averaging purposes, any package of tea of which the gross landing weight was more than 28 lbs. the weight of the empty package be ascertained as follows:—

When the scales have been carefully balanced, a half-pound weight is to be placed in, or attached to, the weight scale. The weight of the package must then be taken to the pound only, the weight scale preponderating according to the usual practice in taring. The half pound weight placed in the scale is to be ignored in recording the tare.

2. The Board further direct that, for average taring, the number of packages for "tarers" prescribed by paragraph 61 of General Order 127/1892, be increased as follows, viz:—

When in a chop or bed, the number of packages of the same size and description of tea is—

20 or less.....	3	" tarers " to be taken, and
from 21 to 60.....	5	do
„ 61 to 120	7	do
„ 121 to 400.....	9	do
„ 401 to 700.....	11	do
„ 701 and upwards.....	13	do

Two or more beds in one chop may be tared together on the foregoing scale.

3. Every package of tea bulked in the United Kingdom shall be separately tared.

General Order 102/1894 respecting taring of bulked teas, and the as yet suspended London Port Order 39/1899 are hereby cancelled.

By order of the Board.

JOHN COURROUX.

MEMORANDUM AS TO LANDING, INSPECTION, SAMPLING, BULKING AND SELLING OF TEAS IN LONDON,

As soon as possible after the tea is landed from the ship on to the quay in the docks and placed under cover of the sheds the different marks are sorted out and conveyed in locked vans or by river lighters to some up-town warehouse either belonging to the Dock Company or a private individual. In the case of Commercial Road Warehouse, the teas are taken up by train from Tilbury Docks,

Arrived at the warehouse, the packages are numbered and marked with the rotation number of the ship and year of import, they are then weighed gross in the presence of a Custom House Officer and one of the clerks of the warehouse, each one entering the weight in his book.

Inspection :—The above operation completed the packages have a portion of the top opened and on the arrival of the selling broker's Inspector a piece of the lead is cut, and are then laid down in rows, so as to be easily accessible. In the case of inspecting by boring there is a small hole bored in the package and after inspection the hole is plugged and a piece of tin nailed over. A hand full of tea is then taken or drawn with a boring iron from each package by one of the warehousemen and placed separately on trays; these trays are then brought to the Selling Broker's Inspector, who sits in a light part of the warehouse and examines separately the handful taken from each chest. By this means he sees any difference which may appear in the leaves either as regards size and colour. He also carefully smells each sample to be sure that there is no taint of damage. If he finds no variation in quality, he passes the break, and there is no occasion to bulk the tea. An average tare can then be taken and tea can be sold without bulking.

Should there be a variation in the appearance of the teas sufficient to necessitate bulking, the Inspector will then, with the permission of his principal, give an order for the bulking of such parcel as may require it.

INDIAN AND CEYLON TEAS.

THE LONDON CONDITIONS OF SALE.

1. The highest Bidder to be the Purchaser, and any dispute that may arise to be settled by the Selling Broker.
2. Brokers must declare in writing, their Principals (to be approved by the Selling Brokers) within 24 hours after the purchase, or be held responsible: and those who may execute orders at this Sale for parties resident in London shall produce a known Agent here, who shall undertake to complete the Contract; in failure of which the Broker so buying shall be held responsible; and if any Broker shall purchase for any person or persons under age, he shall be held responsible. In the case of Teas sold for Cash, the buying Broker to be held responsible.
3. Every person who shall be declared the highest Bidder shall pay to the Selling Broker a Deposit of £1 per Chest at the time of Sale, if demanded, or on the Saturday following the day of Sale, or on the delivery of the Weight Notes; the remainder of the Purchase Money to be paid

within ninety-three days. Interest at the rate of £5 per Cent. per Annum will be allowed on payment of the Deposit, and on the remainder from the day of payment to the Prompt Day. The Tea to be taken by the Buyers at the Customs' Weight, and to be delivered in Bond, with Customs' Tare-Draft as usual. The "Customs' Weight," shall mean the full weight of the packages as landed, and shall include the odd ounces which the packages may weigh in excess of the Customs' inscribed weight; the only Tea which may be taken from the packages (*without returns*) before delivering them to the Buyer, shall be that drawn for Merchants' Samples and for necessary inspecting purposes.

4. These Teas have been weighed, inspected, bulked (in the country of production or London) and tared, and will be reweighed, papered, and leaded down, by the evening of the day after the day of sale. All packages will be nailed down within six days. Delivery will be given on the day after the day of sale, and up to the delivery of Weight Notes, on notice being given (in writing) the day before it is required, to the Selling Broker and Warehouse Keeper. The Buyer to have the option of refusing any packages as to which the above conditions have not been complied with. **Three clear Working Days** are to be allowed for delivery of Weight Notes. The Buyer to have the option of refusing to accept any lot or lots for which Weight Notes have not been delivered by the evening of the third day, by giving a written notice to that effect to the Selling Broker on the following morning, if, on application, he cannot then obtain them. Missing packages, if equal to bulk, and not more than 5 per cent., are exempted from this Condition, and are to be taken by the Buyer at the original price and prompt if tendered within fourteen working days from date of Contract.

5. No claim for difference in bulk from show or selling sample will be entertained unless notified in writing to the Selling Broker within Three Working Days from the Day of Sale. No allowance will be made on account of any damage, rubbish, false package, or unequal goodness, found, or alleged to be found, after the Goods have been taken from the Warehouses.

6. All Tea sold at this Sale to be at the risk of the Sellers until the Prompt Day, unless paid for previously, but only to the extent of market value. In the event of non-delivery by loss from fire, the Contract for such portion to be void, and the Deposit paid to be returned. Rent to commence from the Prompt Day.

7. Lot money to the Selling Broker as usual.

8. If any Buyer shall fail to comply with the above Conditions, the Vendors shall be at liberty to re-sell the Teas either by Public or

Private Sale, the deficiency, if any, with Interest of Money, from the Prompt Day, Warehouse Rent, and all other charges and damages of every kind, to be chargeable to such Defaulter, and be recoverable against him at Law.

9. Any dispute that may arise concerning any parcel sold in this Catalogue to be referred to two Arbitrators (who must be Members of either the Indian Tea Association, the Ceylon Association in London, the Tea Buyers' Association, or of the Tea Brokers' Association of London), to be mutually chosen, and who are to appoint an Umpire, if necessary, the loser to pay the Fees (Two Guineas) to each Arbitrator, and Two Guineas to the Umpire if called in on all arbitrations including attendance at the Warehouses if necessary.

THE LONDON PRODUCE CLEARING HOUSE.

The London Produce Clearing House commenced to register contracts for future delivery in Indian tea in the latter part of 1890. The only kind of tea dealt in on the Clearing House practically consists of Pekoe Souchong, a type of which was selected by the Company. All contracts are regulated by this type. Teas sold or tendered for delivery of future contracts are allowed a range in quality from 1*d.* below to 1*d.* above the quality of this type sample. This type is called the "London Type Indian."

Although contracts registered were in the first instance to Indian tea, it is also admissible to tender whole leaf Ceylon teas on the same terms as Indian, but with a fine of 1*d.* per lb.

The primary object of the registration of contracts for future delivery on the London Produce Clearing House is to protect operators from any loss through failure of their clients to pay differences. For this purpose both buyer and seller on making a contract have to pay to the Clearing House a deposit of £50 for every 20,000 lbs. weight of tea dealt in, this deposit remaining in the hands of the Company until the liquidation of the contract. The Company also receive additional sums as margins according to the rise or fall of the market, the intention being thus to protect contracting parties against bad debts.

The settlement of the type sample by the Company, and the decision of the Committee of Experts regarding any allowances to be made for tea tendered in fulfilment of contract, are intended to be absolute and final, a fixed sample or type, and a final tribunal, being absolutely necessary if Indian tea is to be dealt in for future deliveries.

Of course any suspicion of damage will necessitate a careful examination of the doubtful package, which will have to be turned out if found on

examination to be at all damaged by sea-water or otherwise; the tea will then be picked over by warehousemen and all that is damaged be removed. Where packages are found, on entering the warehouse, to be stained with water, or to be damp on the outside, they are at once examined by the officials of the warehouse, and the tea, if necessary, turned out, and any injured tea carefully removed.

Bulking.—When a tea has to be bulked all the chests in the break are opened and the tea turned out on the floor of the warehouse one by one in a heap; this heap is then turned over and over with a shovel, and the whole then put back into the chests. Of course when teas are bulked the tare of each chest is taken separately.

Merchants' Sampling.—After having gone through all the teas, and bulked such parcels as are necessary, the Selling Brokers' Inspector draws samples and takes them to the office of his principal, who is ready to taste the teas, to report upon them, and value them carefully, using the samples afterwards for distribution amongst buyers and general disposal in such a way as to obtain the strongest possible competition for the teas.

Show Packages.—The teas will generally now be catalogued for sale, and can at once be placed on show. This is done by taking one or two packages from each break and placing them in a light room in the warehouse. The buyers can come and inspect these packages if they wish. As a general rule, however, they only send sampling boys to draw samples out of these chests.

Sale Sampling.—Probably 100 samples will thus be drawn out of these packages which are called "show chests"; and in order to make good the deficiency of weight, the same quantity is given by the sampling boys in return, and this tea put into bags of about one pound each and apportioned to various chests in the break or "bed," that quantity being taken out and put into the show chests so that they may not contain more than about one pound each of this fresh tea in bag which goes by the name of "returns."

The samples which these boys have drawn are taken to the offices of the various buyers and put away in small tin boxes for careful tasting and examination. The buyers then come to the sale with a full knowledge of the teas they are bidding for, which they have drawn by their own representatives, and have had the power of examining for themselves if they cared to do so.

Public Sale.—The tea is then put up to auction by the Selling Broker, who will previously have received instructions and limits from the proprietor. Probably 100 or more buyers will be represented in the room. If the bidding does not reach the limit fixed by the merchant, the tea will be withdrawn from sale and offered privately afterwards by the Selling Broker.

Pound Sampling by Dealers.—After the purchase of the tea the buyer obtains a sampling order from the Selling Broker, and draws as many pounds as he may require, giving back returns, which are put also into bags, not more than one pound being allowed to be taken out of each chest. He then distributes these samples over the country to his various customers, and repeats the operation until he has sold the teas.

Warrants and Weight-Notes.—The Selling Broker orders warrants and weight-notes to be made out by the warehouse proprietor, each warrant or weight-note generally representing six chests or half-chests or ten boxes of tea; the buyer is thus able to take away as small a quantity as six packages at a time instead of having to pay for the whole parcel at once. He gets no tea without paying for it; he must pay for the whole within a period of three months.

Immediately on the purchase of tea the buyer will have paid over a deposit of £1 per chest to the Selling Broker,

Account Sales.—The Selling Broker will, as soon as ever he can get the parcel complete, send in his account sales to the merchant. No delay should occur in this matter, unless one or two odd chests may have gone to a wrong warehouse, and some little time be occupied in ascertaining their whereabouts and sending them to the proper warehouse.

INDIAN TEA.

THE LONDON PRODUCE CLEARING-HOUSE, LIMITED.

The basis of Contract shall be fair whole-leaf Indian Tea, Type No. 3.

Nothing under Type may be tendered, and for better Teas no higher allowance than $\frac{1}{4}$ d. per lb. shall be paid.

Arbitration shall be effected by Experts who are not interested in the Clearing House Market. Marks and numbers, as well as the name of the vessel and date of import, shall be made known to Experts, and Certificates of Quality shall be signed by at least two Experts. There shall be no "cut" on type value and no appeal.

For Teas tendered for delivery during any other month but the one for which the Certificate of Quality originally counts, tenderer shall allow receiver an accumulative bonification for deterioration of $\frac{1}{32}$ d. per lb. for every subsequent month.

In all other respects the existing Rules and Regulations for Indian tea shall apply to Contracts for "Indian Type No. 3."

The Deposit will be £30 for each unit of Contract, each side.

SALE OF FOOD AND DRUGS ACT. (38 & 39 Vict. Ch 63).

SPECIAL PROVISIONS AS TO TEA.

TEA TO BE EXAMINED BY THE CUSTOMS ON IMPORTATION.

From and after the first day of January one thousand eight hundred and seventy-six all tea imported as merchandise into and landed at any port in Great Britain or Ireland shall be subject to examination by persons to be appointed by the Commissioners of Customs, subject to the approval of the Treasury. for the inspection and analysis thereof, for which purpose samples may, when deemed necessary by such inspectors, be taken and with all convenient speed be examined by the analysts to be so appointed; and if upon such analysis the same shall be found to be mixed with other substances or exhausted tea, the same shall not be delivered unless with the sanction of the said commissioners, and on such terms and conditions as they shall see fit to direct, either for home consumption or for use as ships stores or for exportation; but if on such inspection and analysis it shall appear that such tea is in the opinion of the analyst unfit for human food, the same shall be forfeited and destroyed or otherwise disposed of in such manner as the said commissioners may direct.

INTERPRETATION OF ACT.

Tea to which the term "exhausted" is applied in this act shall mean and include any tea which has been deprived of its proper quality, strength, or virtue by steeping, infusion, decoction, or other means,

TEA BROKERS IN LONDON—1901.

(B). Beach & Newman	...	24 Rood Lane, E.C.
(B). Binches, Thomas A.	...	9 Mincing Lane, E.C.
(B). Carthew, S. & Co.	...	11 Rood Lane, E.C.
(B). Clark, J. W. & Co.	...	7 Mincing Lane, E.C.
(B). Craven, Henry,	...	28 Fenchurch St., E.C.
Drew. Kerr & Co	...	20 Eastcheap, E.C.

	Elliott & Lack	... 39	Eastcheap, E.C.
	Ewart, Maccaughey & Co., Ltd	... 1	Mincing Lane, E.C.
(B).	Favell, Wm. Weston	... 23	Rood Lane, E.C.
	Ferguson & Odell	... 5	Great Tower St., E.C.
	Franks & Gander	... 28	Mincing Lane, E.C.
	Gibbs, Richard & Co.	... 28	Fenchurch St., E.C.
	Gow, Wilson & Stanton	... 13	Rood Lane, E.C.
(B).	Hallam, John Braugh	... 27	Mincing Lane, E.C.
	Hancock Bros. & Co.	... 28	Mincing Lane, E.C.
(B).	Harrison, G. & Co.	... 8	Great Tower St., E.C.
(B).	Hickson Bros.	... 23	Rood Lane, E.C.
	Hope, Charles & Co.	... 27	Mincing Lane, E.C.
(B).	Lapworth & Tyer-	. 21	Eastcheap, E.C.
	Layton & Co.	. 30	Mincing Lane, E.C.
(B).	Le Maitre & Matthews,	. 36 & 37	Mincing Lane, E.C.
	Lloyd & Carter	. 32	Fenchurch St., E.C.
	Lloyd, Matheson & Carritt	130	Fenchurch St., E.C.
	Long, F. S. & Co.	... 10 & 11	Mincing Lane, E.C.
(B).	Longworthy, H. V. E.	... 9	Mincing Lane, E.C.
(B).	Meeking, Horace	.. 13	Idol Lane, E.C.
	Monckton, C. & Co.	... 9	Mincing Lane, E.C.
(B)	Pearse, L. F. & Co.	... St. Dunstan's House.	Idol Ln., E.C.
	Ripley, Howse & Co.	... 9	Mincing Lane, E.C.
	Rucker, Bencraft & Co.	... 37	Mincing Lane, E.C.
	Rucker, Marshall & Co.	. 11 & 12	Great Tower St., E.C.
	Sanderson & Co.	... 37	Mincing Lane, E.C.
	Shepard & Co.	... 23	Rood Lane, E.C.
	Smith & Lewis	. 9	Mincing Lane, E.C.
	Stenning, Inskipp & Co.	... 14	Mincing Lane, E.C.
(B).	Taylor, Sudlow & Co.	.. 23	Rood Lane, E.C.
	Theodore & Rawlins	... 71	Eastcheap, E.C.
	Thomas, Cumberlege & Moss	.. 27	Mincing Lane, E.C.
	Thompson, W. J. & H.	38	Mincing Lane, E.C.
(B).	Townend, Herbert & Co.	... 39	Eastcheap, E.C.
(B).	Townend & Jobbins	... 39	Eastcheap, E.C.
(B).	Turner, Frank	... 71	Eastcheap, E.C.
	Walker, Lambe & Co.	. 23	Rood Lane, E.C.
	White, George & Co.	... 31	Fenchurch St., E.C.
	Wicks & Debenham	.. 11	Mincing Lane, E.C.
	Wilson, Smithett & Co.	... 39	Mincing Lane, E.C.
(B).	Wood, Cuff & Co.	... 3	Great Tower St., E.C.

Those marked with (B). are Buying Brokers.

PRO FORMA ACCOUNT SALES OF INDIAN TEAS
SOLD IN CALCUTTA.

		Per lb.		Rs.	a.	p.	
		Rs.	a.	p.			
25 chests Pekoe net	2,250 lbs. ...	0	12	0	1,687	8	0
25 " Broken Pekoe	2,500 " ...	1	0	0	2,500	0	0
25 " Pekoe Souchong	2,250 " ...	0	0	8	1,125	0	0
25 " Broken Tea	2,500 " ...	0	0	6	937	8	0
100 chests weighing net		9,500 lbs.			6,250	0	0
Less Broker's Charges.							
Bill Stamps...	...	0	0	0			
Lotting, Advertising, Inspecting, &c.	...	25	0	0			
Brokerage on Rs. 6,250 at 1 per cent	...	62	8	0			
					87	8	0
Charges.							
					6,162	8	0
To Cooly, Cartage, and Delivering to Brokers	...	25	0	0			
Town Dues ...	...	1	12	0			
Postage and Petties	...	1	8	0			
Freight from Assam	...	148	7	0			
Commission on Rs. 6,250 at 2½ per cent.	...	156	4	0			
					332	15	0
Rs...					5,829	9	0

COLOMBO.

		Rs.	cts.	Rs.	cts.		
By 11 pkgs. 825 lbs. Orange Pekoe at 32 cts.	...	264	00				
" 30 " 2,460 " Pekoe at 28 cts.	...	688	80				
				952	80		
Less 3 lbs. sampling allowance	...			1	80		
Charges.							
				951	00		
To Tea Cess at 30 cents per 100 lbs.	...	9	60				
" Public Sale Expenses 2 lots at 25 cents ...	...		50			
" Brokerage at 1 %	...	9	51				
" Receiving and delivering at ¼ ct. per lb.	...	8	22				
" Commission at 1 %	...	9	51				
				37	34		
Rs..					913	66	

Charges :—Cess 30 Agency 76=total 1·06 cents per lb.

PRO FORMA ACCOUNT SALES OF CEYLON TEAS
SOLD IN LONDON.

				£	s.	d.	£	s.	d.
27	½-chs.	Bro. Or. Pekoe	1,400 ... 10½	59	15	11			
25	Chs.	Orange Pekoe	2,330 ... 7½	72	16	3			
20	„	Pekoe	1,571 ... 6½	42	11	0			
1	„	Pekoe Souchong	265 . 5	5	10	5			
4	½ „	Dust	279 ... 6	6	19	6			
80			<u>5,845</u>				157	13	
		Loss 33, Dft. 80	<u>113</u>						
		Amount of Invoice	5,958						
		Charges.							
		Freight 332 ft. 10 at 20/ per							
		50 cubic ft. ...	...	6	13	2			
		Interest on do do	..		1	10			
		Warehouse charges	.	5	1	1			
		Interest on do	.		2	0			
		Public Sale Expenses	.		12	0			
		Brokerage 1 % ..	..	1	17	7			
				17	7	8			
		£170-5-5							
		Discount £710-5-5-86		£	s.	d.			
		days at 5 %	... 2	0	1				
		Fire Insurance £190							
		at 2/3 % ...	. ... 4	3					
		Marine Insurance	... 1	0	8				
		Commission 1½ %	.. 2	16	5				
				6	1	5			
							23	9	1
							<u>£161</u>	<u>1</u>	<u>0</u>

NOTE.—Charges = 99ld. per lb.

TEAS FOR AMERICA.

Freight from Colombo to New York 40/ to 55/, transhipment on through bill of lading at London or Continental Ports.

Value of teas laid down in London in pence multiplied by $2\frac{1}{2}$ = laying down price in New York in cents of dollar.

Trade require chiefly 40 lbs. to 50 lbs. packages.

PRO FORMA ACCOUNT SALES OF INDIAN OR CEYLON TEAS.

NEW YORK.

	\$. c.	\$. c
100 packages weighing net 50 lbs.=5,000 lbs, at 25 cts.	1,250 00	
Less 3 per cent for cash in 10 days ...	37 50	
Charges.		1,212 50
Freight, Marine Insurance, prepaid ..	...
Custom House Entry \$3.50, Cartage \$3, Storage \$3 ...	... 9 50	
Weighing samples \$1, Cooperage \$1; Petties \$1	3 00	
Fire Insurance \$1.10 per cent, ..	1 30	
Telegrams and Postage ...	10 50	
Brokerage, 1 per cent....	12 50	
Commission and Guarantee, 7½ per cent.	93 75	
	118 05	130 55
Net Proceeds ...	...	1,081 95
Remitted to London, demand at \$4.84 ...	...	£223-10-10

TEAS FOR CANADA.

Pro Forma a/c Ceylon Green Tea to Toronto.

		\$ cts.	
26 Chests Young Hyson lbs. 2,444 at cents. 14½	...	354	58
22 " Hyson " 2,068 " 12½	...	258	50
5 " Do No. 2 " 115 " 10½	...	43	57
53		1,927	
		656	45 = £134 6 10
	Charges ...	26	40 5 8 0
		\$630	05 £128 18 10
		d.	
Gross price per lb.	... ..	6	54
Toronto charges	... ..	26	6 28
Freight, marine insurance, Shipping and Certificate Rs. 268.51 = £18-3-7	... ..		.88
			5.10
Bonus 5 cents. per lb.	... ..		.80
		Net	6.20

DUNEDIN, NEW ZEALAND.

		£	s.	d.	£	s.	d.
6 half-chests tea	210 lbs. at 11	11	0	0			
2 " "	80 " at 10	3	6	8			
2 " "	77 " at 9½	3	0	11			
10 " "	1,600 " at 7½	50	0	0			
50 " "	1,000 " at 7½	31	5	0	98	12	7
Charges.							
Harbour dues and Customs Entries...	...		14	6			
Bond, Rent, Receiving, Delivery and Carriage ...	...	8	3	7			
Postage and Bill Stamps	... ..		10	0			
Fire Insurance £100/ at ½%	... ..		10	0			
Commission and Guarantee at 5%	... ..	5	0	0			
					11	18	1
					£	83	14 6

Account sales of Teas Ex Australia sold by Messrs. W. Smith & Co., 72, Clan Street, Melbourne, by order and on account of the concerned.

	£	s.	d.	£	s.	d.
154 pkgs. tea sold by Auction				317	17	4
Charges.						
Freight paid in Colombo—Overland Samples		6	0			
Ligherage 2/3—Wharfage 2/14/9	4	17	9			
Customs entry and Petty charges, Advertisement charges		4	6			
Cartage		18	4			
Labour, Coopering, Marking, &c.	3	4	2			
Insurance		16	0			
Warehouse rent, receiving and delivering		4	3			
Brokerage at 1%	3	3	7			
Commission 2½% on £317-17-4	7	18	11			
Guarantee 2½% on £317-17-4	7	18	11			
Discount at 3½%	11	2	6			
				40	14	11
				£277	2	5

Melbourne, March 20th, 1901.

W. SMITH & CO.

MELBOURNE.

	£	s.	d.
By 50 half-chests Pekoe Souchong each 40 lbs.=2,000 lbs. at 1s.	100	0	0
Charges.			
To Selling Commission, Brokerage, Auction charges, Guarantee and Discount, Wharfage, Cartage and all charges inclusive 10%	10	0	0
	£90	0	0

10% is an average rate, the percentage being frequently arranged between Shipper and Consignee.

Auction charges, guarantee and discount = 7½ per cent, 5/ per ton of 40 cubic feet measurement wharfage rates, and cartage into store at 2/6 per load of 40 half-chests. Should teas go into bond for a time, the rents per week are ¼d. per half-chest, and delivery from bond 1d. per half-chest or for chest 1½d. If sold on arrival, bonding charges are avoided.

Equivalent Value of Teas in Colombo to London Prices in pence, freight, insurance, and charges, 1½d. per lb.

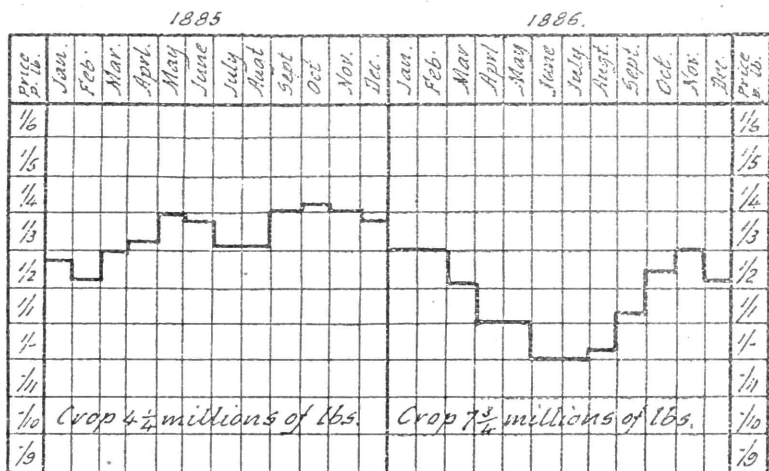
London Price per lb.	EXCHANGE RATES.								
	1/3	1/3¼	1/3½	1/3¾	1/4	1/4¼	1/4½	1/4¾	1/5
Charges.	8·33	8·19	8·06	7·93	7·81	7·69	7·57	7·46	7·35
3	11·67	11·48	11·28	11·10	10·93	10·76	10·61	10·44	10·25
3¼	13·33	13·12	12·89	12·69	12·49	12·30	12·11	11·93	11·72
3½	15·00	14·76	14·50	14·28	14·05	13·84	13·63	13·42	13·19
3¾	16·66	16·40	16·11	15·87	15·61	15·38	15·15	14·91	14·66
4	18·33	18·03	17·73	17·46	17·18	16·91	16·67	16·41	16·12
4¼	19·99	19·67	19·34	19·05	18·74	18·45	18·18	17·90	17·59
4½	21·66	21·31	20·95	20·64	20·30	20·09	19·70	19·39	19·06
4¾	23·32	22·95	22·56	22·23	21·86	21·53	21·21	20·88	20·53
5	24·99	24·59	24·18	23·81	23·43	23·07	22·73	22·38	21·99
5¼	26·65	26·23	25·79	25·40	24·99	24·61	24·21	23·87	23·46
5½	28·32	27·87	27·40	26·99	26·55	26·15	25·76	25·36	24·93
5¾	29·98	29·51	29·01	28·58	28·11	27·69	27·27	26·85	26·40
6	31·65	31·14	30·62	30·16	29·67	29·22	28·79	28·35	27·86
6¼	33·31	32·78	32·23	31·75	31·23	30·76	30·30	29·84	29·33
6½	34·98	34·42	33·84	33·33	32·89	32·30	31·82	31·33	30·80
6¾	36·64	36·06	35·45	34·92	34·35	33·84	33·33	32·82	32·27
7	38·31	37·70	37·07	36·60	35·92	35·37	34·85	34·32	33·73
7¼	39·97	39·34	38·68	38·09	37·48	36·91	36·36	35·81	35·20
7½	41·64	40·98	40·29	39·68	39·04	38·45	37·88	37·30	36·67
7¾	43·30	42·62	41·90	41·27	40·60	39·99	39·39	38·79	38·14
8	44·97	44·25	43·52	42·85	42·17	41·52	40·91	40·29	39·60
8¼	46·63	45·89	45·13	44·44	43·73	43·06	42·42	41·78	41·07
8½	48·30	47·53	46·71	46·03	45·29	44·60	43·94	43·27	42·54
8¾	49·96	49·17	48·35	47·62	46·85	46·14	45·45	44·76	44·01
9	51·63	50·81	49·97	49·20	48·42	47·67	46·97	46·26	45·47
9¼	53·29	52·45	51·58	50·79	49·98	49·21	48·48	47·75	46·94
9½	54·96	54·09	53·19	52·38	51·54	50·75	50·00	49·24	48·41
9¾	56·62	55·73	54·80	53·96	53·10	52·29	51·51	50·73	49·88
10	58·29	57·37	56·41	55·55	54·66	53·83	53·03	52·23	51·33
10¼	59·95	59·01	58·02	57·14	56·22	55·37	54·54	53·72	52·80
10½	61·62	60·65	59·63	58·72	57·78	56·91	56·06	55·21	54·27
10¾	63·28	62·29	61·24	60·31	59·34	58·45	57·57	56·70	55·74
11	64·95	63·92	62·86	61·89	60·91	59·98	59·09	58·20	57·20
11¼	66·61	65·56	64·47	63·48	62·47	61·52	60·60	59·69	58·67
11½	68·28	67·20	66·08	65·07	64·03	63·06	62·12	61·18	60·14
11¾	69·94	68·84	67·69	66·66	65·59	64·60	63·63	62·67	61·61
12	71·61	70·48	69·31	68·21	67·16	66·13	65·15	64·17	63·06
12¼	73·27	72·12	70·92	69·83	68·72	67·67	66·66	65·66	64·53
12½	74·94	73·76	72·53	71·42	70·28	69·21	68·18	67·15	66·00
12¾	76·60	75·40	74·14	73·01	71·84	70·75	69·69	68·64	67·47
13	78·27	77·03	75·76	74·59	73·41	72·28	71·21	70·14	68·93
13¼	79·93	78·67	77·37	76·18	74·97	73·82	72·72	71·63	70·40
13½	81·60	80·31	78·98	77·77	76·53	75·36	74·24	73·12	71·87

Equivalent Value of Teas in Colombo to London Prices in
pence, freight, insurance, and charges. 1½d. per lb.

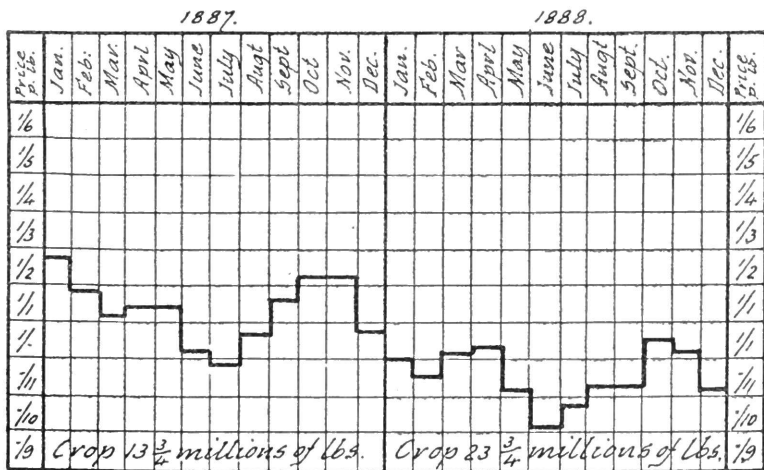
Continued.

London Price per lb.	EXCHANGE RATES.								
	1/3	1/3¼	1/3½	1/3¾	1/4	1/4¼	1/4½	1/4¾	1/5
Charges.	8·3	8·19	8·06	7·93	7·81	7·69	7·57	7·46	7·35
13¼	83·26	81·95	80·59	79·36	78·09	76·90	75·75	74·61	73·34
14	84·93	83·59	82·21	80·94	79·66	78·43	77·27	76·11	74·80
14¼	86·59	85·23	83·82	82·53	81·22	79·97	78·78	77·60	76·27
14½	88·26	86·87	85·43	84·12	82·78	81·51	80·30	79·09	77·74
14¾	89·92	88·51	87·04	85·71	84·34	83·05	81·81	80·58	79·21
15	91·59	90·15	88·66	87·29	85·91	84·59	83·33	82·08	80·67
15¼	93·25	91·79	90·27	88·88	87·47	86·13	84·84	83·57	82·14
15½	94·92	93·43	91·88	90·47	89·03	87·67	86·36	85·06	83·61
15¾	96·58	95·07	93·49	92·05	90·59	89·21	87·87	86·55	85·08
16	98·25	96·71	95·10	93·64	92·15	90·74	89·39	88·05	86·53
16¼	99·91	98·35	96·71	95·23	93·71	92·28	90·90	89·54	88·00
16½	101·58	99·99	98·32	96·81	95·27	93·82	92·42	91·03	89·47
16¾	103·24	101·63	99·93	98·40	96·83	95·36	93·93	92·52	90·94
17	104·91	103·26	101·55	99·98	98·40	96·89	95·45	94·02	92·40
17¼	106·57	104·90	103·16	101·57	99·96	98·43	96·96	95·51	93·87
17½	108·24	106·54	104·77	103·16	101·52	99·97	98·48	97·00	95·34
17¾	109·90	108·18	106·38	104·75	103·08	101·51	99·99	98·49	96·81
18	111·57	109·81	108·00	106·33	104·65	103·04	101·51	100·00	98·27
Add for every ¼d. charges less than 1½d.	1·66	1·64	1·61	1·59	1·56	1·54	1·52	1·49	1·47

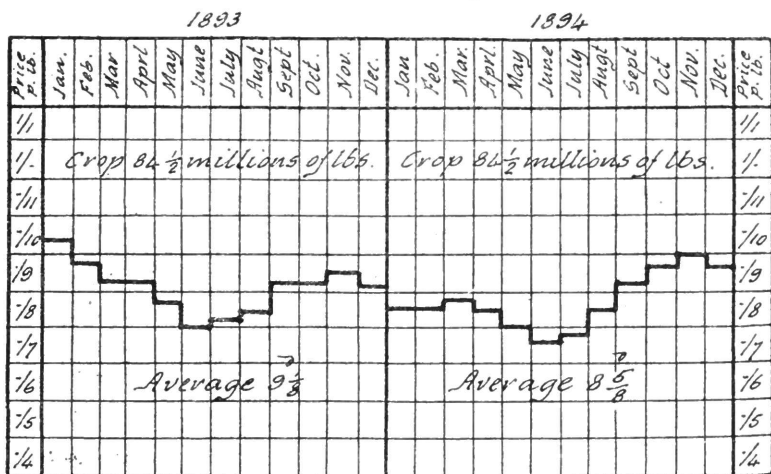
Average London Sale Prices for Ceylon Teas
Years 1885-1886.



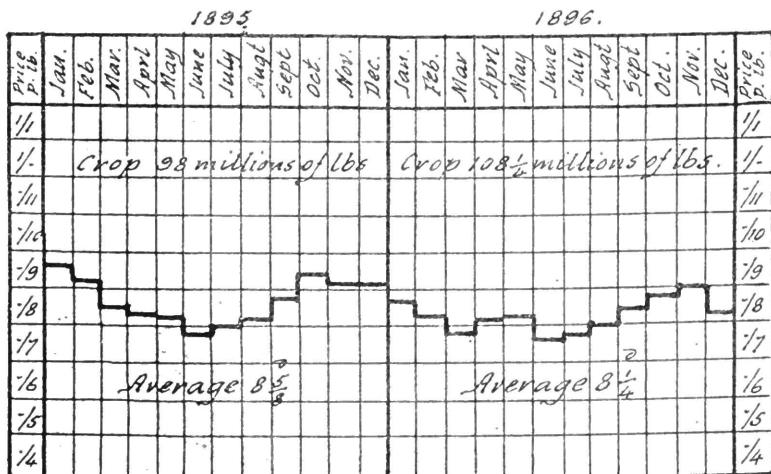
Average London Sale Prices for Ceylon Teas
Years 1887-1888.



Average London Sale Prices for Ceylon Teas
Years 1893-1894.



Average London Sale Prices for Ceylon Teas
Years 1895-1896



AVERAGE PRICES OF CEYLON TEAS SOLD IN LONDON MARKET.

Years	TEA PACKAGES.			Average d.
	Offered	Sold		
1885	58,921	15.25 per lb.
1886	101,145	13. "
1887	182,955	12.75 "
1888	303,284	11.50 "
1889	431,043	11. "
1890	535,611	10.75 "
1891	755,502	9.87 "
1892	...	814,000	737,000	9.25 "
1893	...	837,640	757,000	9. "
1894	...	895,000	800,000	8.50 "
1895	...	978,000	889,000	8.62 "
1896	...	1,004,000	862,000	8.21 "
1897	...	1,146,000	1,050,000	7.71 "
1898	...	1,115,000	1,050,000	7.76 "
1899	...	1,123,000	1,046,000	7.96 "
1900	...	1,295,000	1,179,000	7.20 "
1901	...	1,217,000	1,059,800	6.86 "

N.B.—Colombo Sales will be found on page 122.

Monthly Averages of Ceylon Tea sold in London from 1892 to 1902.

MONTH.	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
January	9½	10½	8½	9½	8½	8½	8½	8½	7½	6½	7½	
February	9½	9½	8½	9½	8½	8½	7½	8½	7½	6½	7½	
March	9	9½	8½	8½	7½	8½	7½	8½	7½	6½	7½	
April	9½	9½	8½	8½	8½	7½	7½	8½	7½	7½	6½	
May	9½	8½	8	8½	8½	7½	7½	8½	7½	6½	6½	
June	8½	8	7½	7½	7½	7½	7½	7½	6½	6½	6½	
July	8½	8½	7½	8	7½	7½	7½	7½	7½	6½	6½	
August	8½	8½	8½	8½	8	7½	7½	7½	7	6½	6½	
September	9½	9½	9½	8½	8½	8	8½	7½	6½	7½	6½	
October	10½	9½	9½	9½	8½	8½	8½	8½	7½	8	6½	
November	11½	9½	10½	9½	9	8½	8½	8	7½	7½	6½	
December	10½	9½	9½	9½	8½	8½	8½	7½	7½	7½	6½	
Total...	9½	9½	8½	8½	8½	7½	7½	8	7½	7		

INDIAN AND CEYLON AVERAGES.

1895,			1896.		
Week	Indian.	Ceylon.	Week	Indian.	Ceylon
Ending.	d.	d.	Ending.	d.	d.
January 4	10 $\frac{1}{4}$	10	January 3	8	9
" 11	10 $\frac{1}{4}$	10	" 10	8 $\frac{1}{4}$	9
" 18	10	10	" 17	8 $\frac{1}{2}$	8 $\frac{1}{2}$
" 25	10	9 $\frac{1}{4}$	" 24	9 $\frac{1}{4}$	8 $\frac{1}{4}$
February 1	10	9 $\frac{3}{4}$	" 31	9	8 $\frac{1}{2}$
" 8	10	9 $\frac{1}{4}$	February 7	9 $\frac{1}{4}$	8 $\frac{1}{2}$
" 15	9 $\frac{3}{4}$	9	" 14	9	8 $\frac{1}{4}$
" 22	10	9 $\frac{1}{4}$	" 21	9 $\frac{1}{4}$	8 $\frac{1}{4}$
March 1	9 $\frac{1}{4}$	9	" 28	9 $\frac{1}{2}$	8 $\frac{1}{4}$
" 8	10	8 $\frac{1}{4}$	March 6	8 $\frac{1}{2}$	8
" 15	9 $\frac{1}{2}$	8 $\frac{1}{2}$	" 13	8 $\frac{1}{4}$	7 $\frac{3}{4}$
" 22	9 $\frac{1}{2}$	8 $\frac{1}{2}$	" 20	8 $\frac{1}{2}$	7 $\frac{3}{4}$
" 29	9	8 $\frac{1}{2}$	" 27	8	7 $\frac{3}{4}$
April 5	9	8 $\frac{1}{4}$	April 2	8 $\frac{1}{4}$	8
" 11	9 $\frac{1}{4}$	8	Easter ..	...	...
Easter ...	...	...	April 17	9 $\frac{1}{4}$	8
April 26	9 $\frac{1}{4}$	8 $\frac{1}{4}$	" 24	8 $\frac{1}{4}$	8 $\frac{1}{4}$
May 3	9	8 $\frac{1}{4}$	May 1	7 $\frac{1}{4}$	8 $\frac{1}{2}$
" 10	9 $\frac{1}{4}$	8 $\frac{1}{4}$	" 8	8	8 $\frac{1}{2}$
" 17	9	8 $\frac{1}{4}$	" 15	7 $\frac{1}{2}$	8 $\frac{1}{2}$
" 24	9	8	" 22	7 $\frac{1}{2}$	8
" 31	8 $\frac{1}{4}$	8 $\frac{1}{4}$	" 29	...	7 $\frac{1}{4}$
June 7	...	8	June 5	9	7 $\frac{1}{4}$
" 14	9 $\frac{3}{4}$	7 $\frac{1}{4}$	" 12	7 $\frac{1}{4}$	7 $\frac{1}{4}$
" 21	9 $\frac{1}{4}$	7 $\frac{1}{4}$	" 19	8	7 $\frac{1}{2}$
" 28	8 $\frac{1}{2}$	7 $\frac{1}{2}$	" 26	8 $\frac{1}{4}$	7 $\frac{1}{4}$
July 5	8	7 $\frac{1}{4}$	July 3	9	7 $\frac{1}{4}$
" 12	7 $\frac{1}{4}$	7 $\frac{1}{2}$	" 10	8 $\frac{1}{4}$	7 $\frac{1}{4}$
" 19	8 $\frac{1}{4}$	7 $\frac{1}{4}$	" 17	9 $\frac{1}{4}$	7 $\frac{1}{4}$
" 26	8	8 $\frac{1}{4}$	" 24	9	7 $\frac{1}{4}$
August 2	8 $\frac{1}{4}$	8 $\frac{1}{4}$	" 31	9 $\frac{1}{4}$	8
" 9	9	8	August 7	11	7 $\frac{1}{2}$
" 16	8 $\frac{1}{2}$	8	" 14	10	8
" 23	8	8 $\frac{1}{4}$	" 21	10	8
" 30	8 $\frac{1}{4}$	8 $\frac{1}{4}$	" 28	9 $\frac{1}{2}$	8
September 6	8 $\frac{1}{2}$	8 $\frac{1}{4}$	September 4	10 $\frac{1}{4}$	8
" 13	8 $\frac{1}{4}$	8 $\frac{1}{4}$	" 11	10 $\frac{1}{4}$	8 $\frac{1}{4}$

INDIAN AND CEYLON AVERAGES.—*Contd.*

1895.			1896.		
Week Ending.	Indian.	Ceylon.	Week Ending.	Indian.	Ceylon.
	d.	d.		d.	d.
" 20	8½	8¾	" 18	10¼	8½
" 27	9¼	9	" 25	10	8¾
October 4	9	9	October 2	9¾	9
" 11	9	9½	" 9	9	8¾
" 18	8½	9¾	" 16	9¼	8¾
" 25	8½	9½	" 23	9	8¾
November 1	8½	9½	" 30	8¾	8½
" 8	9¼	9¼	November 6	8½	8¾
" 15	8½	9	" 13	8½	9¼
" 22	9¼	9	" 20	8¾	9
" 29	8¾	9	" 27	8¼	8¾
December 6	9¼	9¼	December 4	8¼	8½
" 13	9	8¾	" 11	8	8¼
" 20	9	9	" 18	8½	8¼
.....	...	...	" 23	8	7¾
Year's Average	9	8½	Year's Average	8¼	8·21
1897.			1898.		
January 8	9	8	January 7	8·38	8·30
" 15	9	8	" 14	8·39	8·13
" 22	9¼	8	" 21	8·28	8·28
" 29	9¼	8	" 28	8·05	8·16
February 5	9¾	8	February 4	7·98	7·72
" 12	9¾	8	" 11	8·62	7·40
" 19	9½	8¼	" 18	8·25	7·39
" 26	9¾	8½	" 25	8·15	7·23
March 5	9½	8¼	March 4	8	7
" 12	9	8¼	" 11	7·85	7·12
" 19	9	8¼	" 18	8·20	7·05
" 26	8	8¼	" 25	8·47	7·22
April 2	7¾	7¾	April 1	7·50	7·15
" 9	7	7½	" 7	7·60	7·15
" 15	6¾	7¾	Easter ...	..	...
Easter ...	...	...	April 22	7·87	7·54
April 30	7¼	7½	" 29	7·91	7·81
May 7	7	7½	May 6	7·75	7·62
" 14	7	7½	" 13	7·09	7·72
" 21	7	7¼	" 20	7·28	7·78

INDIAN AND CEYLON AVERAGES.—*Contd.*

1897,				1898.		
Week	Indian,	Ceylon	Week	Indian,	Ceylon,	
Ending,	d.	d.	Ending,	d.	d.	
May 28	5 $\frac{3}{4}$	7 $\frac{1}{2}$	May 27	6·85	7·73	
June 4	8 $\frac{1}{4}$	7 $\frac{1}{2}$	Whitsun ...	..	...
„ 11	..	7 $\frac{1}{4}$	June 10	7·27	7·70	
„ 18	8 $\frac{1}{4}$	7 $\frac{1}{4}$	„ 17	7·38	7·58	
Jubilee ...	.	...	„ 24	7·60	7·59
July 2	8 $\frac{1}{4}$	7	July 1	7·89	7·46	
„ 9	7 $\frac{1}{2}$	7	„ 8	7·20	7·34	
„ 16	8 $\frac{1}{4}$	7	„ 15	7·25	7·35	
„ 23	8 $\frac{1}{4}$	7	„ 22	8·15	7·29	
„ 30	8 $\frac{1}{2}$	7 $\frac{1}{4}$	„ 29	8·45	7·23	
August 6	11 $\frac{1}{4}$	...	August 5	10·38	...
„ 13	10	7 $\frac{1}{2}$	„ 12	9	7·44	
„ 20	10	7 $\frac{1}{2}$	„ 19	9·95	7·63	
„ 27	9 $\frac{1}{2}$	7 $\frac{1}{2}$	„ 26	8·56	7·68	
September 3	10	7 $\frac{1}{2}$	September 2	9·30	7·74	
„ 10	9	7 $\frac{1}{2}$	„ 9	9·25	7·73	
„ 17	9	7 $\frac{1}{4}$	„ 16	9·65	8·28	
„ 24	8 $\frac{1}{2}$	8 $\frac{1}{4}$	„ 23	8·77	8·34	
October 1	9 $\frac{1}{2}$	8 $\frac{1}{2}$	„ 30	8·69	8·15	
„ 8	8 $\frac{3}{4}$	8 $\frac{3}{4}$	October 7	8·33	8·42	
„ 15	9	8 $\frac{1}{4}$	„ 14	8·29	8·67	
„ 22	9	8 $\frac{1}{4}$	„ 21	8	8·46	
„ 29	9·05	9·03	„ 28	8·25	8·50	
November 5	8·80	9·04	November 1	8·35	8·41	
„ 12	8·88	8·58	„ 11	8·15	8·51	
„ 19	8·44	8·58	„ 18	8·23	8·38	
„ 26	8·89	8·50	„ 25	9·33	8·23	
December 3	8·86	8·65	December 2	8·05	8·20	
„ 10	8·72	8·64	„ 9	7·78	8·20	
„ 17	8·51	8·27	„ 16	8·25	7·99	
„ 23	7·97	8·18	„ 23	7·78	8	
Year's Average	9	7·71	Year's Average	8·30	7·76	
1899.				1900.		
January 6	8·55	8·04	January 5	8·07	7·76	
„ 13	8·72	8·03	„ 12	8·34	7·96	
„ 20	9·12	8·11	„ 19	8·15	7·71	
„ 27	9·04	8·17	„ 26	7·98	7·44	

INDIAN AND CEYLON AVERAGES,—Contd.

1899.			1900.				
Week	Indian.	Ceylon.	Week	Indian.	Ceylon.		
Ending.	d.	d.	Ending.	d.	d.		
February	3	9·34	8·05	February	2	7·71	7·25
„	10	8·96	8·09	„	9	7·60	7·55
„	17	9·22	8·55	„	16	8·14	7·39
„	24	9·42	8·66	„	23	8·08	7·65
March	3	8·97	8·57	March	2	8·23	7·60
„	10	9·25	8·66	„	9	No Sale	Budget
„	17	9·27	8·60	„	16	8·	7·50
„	24	9·50	8·80	„	23	7·97	7·58
„	30	9·66	9·30	„	30	7·64	7·39
Easter	...	...	...	April	6	7·93	7·43
April	14	9·61	9·02	„	12	7·55	7·45
„	21	9·87	8·57	Easter	...	...	...
„	28	9·18	8·42	April	27	7·56	7·34
May	5	8·91	8·15	May	4	7·72	7·16
„	12	8·83	8·16	„	11	7·43	7·17
„	19	8·17	7·99	„	18	7·25	7·12
Whitsun	...	...	...	„	25	6·81	6·95
June	2	8·14	7·93	June	1	6·55	6·74
„	9	7·83	7·73	Whitsun	...	...	...
„	16	7·91	7·61	June	15	6·61	6·74
„	23	8·53	7·62	„	22	6·99	6·50
„	30	7·61	7·26	„	29	7·06	6·59
July	7	No	Sale	July	6	6·75	6·63
„	14	„	„	„	13	6·68	6·83
„	21	7·92	7·13	„	20	6·89	7·10
„	28	6·88	7·41	„	27	7·72	7·29
August	4	6·90	7·73	August	3	8·08	7·28
„	11	6·83	7·36	„	...	...	...
„	18	7·93	7·15	„	17	8·74	7·03
„	25	8·20	6·87	„	21	8·46	6·90
September	1	8·67	7·05	„	31	7·94	6·81
„	8	8·48	7·32	September	7	8·37	6·81
„	15	9·02	7·62	„	14	8·07	6·76
„	22	8·77	8·03	„	21	8·14	6·83
„	29	8·72	8·27	„	28	8·75	6·97
October	6	9·12	8·25	October	5	8·05	7·15
„	13	8·58	7·93	„	12	8·01	7·44

INDIAN AND CEYLON AVERAGES.—*Contd.*

1899.			1900.		
Week	Indian.	Ceylon.	Week	Indian.	Ceylon.
Ending.	d.	d.	Ending.	d.	d.
October 20	8.69	7.90	October 19	7.61	7.62
„ 27	8.34	8.02	„ 26	7.89	7.45
November 3	8.84	8.43	November 2	7.34	7.56
„ 10	8.64	8.25	„ 9	6.87	6.99
„ 17	8.81	8.15	„ 16	7.17	7.10
„ 24	8.19	7.85	„ 23	6.83	7.44
December 1	8.22	7.69	„ 30	7.03	7.59
„ 8	8.	7.68	December 7	6.61	7.45
„ 15	8.32	7.77	„ 14	7.02	7.38
„ 22	8.02	7.82	„ 28	6.70	7.14
Year's Average	8.75	7.96	Year's Average	7.74	7.20
1901.			1901.		
January 4	6.89	7.07	July 5	7.04	6.24
„ 11	7.00	6.56	„ 12	6.79	6.16
„ 18	6.86	6.68	„ 19	7.33	6.23
„ 25	6.88	6.98	„ 26	8.58	6.56
February 1	6.59	6.40	August 2	8.77	6.45
„ 8	6.34	6.28	„ 16	8.90	6.63
„ 15	6.12	5.88	„ 23	8.81	6.70
„ 22	6.71	6.33	„ 30	8.23	6.88
March 1	7.05	6.37	September 6	8.47	6.93
„ 8	7.22	6.51	„ 13	8.15	7.19
„ 15	6.86	6.48	„ 20	8.78	7.51
„ 22	6.82	6.65	„ 27	8.62	7.83
„ 29	6.95	7.08	October 4	8.47	8.03
April 4	6.57	7.35	„ 11	7.77	7.79
„ 11	...	...	„ 18	7.75	7.79
„ 19	7.01	7.28	„ 25	8.21	8.02
„ 26	6.89	6.90	November 1	8.19	8.18
May 3	6.18	6.63	„ 8	7.90	7.85
„ 10	5.97	6.55	„ 15	7.82	7.69
„ 17	6.03	6.38	„ 22	7.71	7.63
„ 24	6.35	6.59	„ 29	7.58	7.76
June 14	6.62	6.62	December 6	7.19	7.45
„ 21	8.00	6.33	„ 13	7.55	7.49
„ 28	6.21	6.30	„ 20	7.57	7.45
	Year's Average—Indian	...	7.50d.		
	Do do Ceylon	...	6.86d.		

SHIPMENTS OF CEYLON TEA CROPS, 1883-91.

	1883 lbs.	1884 lbs.	1885 lbs.	1886 lbs.	1887 lbs.	1888 lbs.	1889 lbs.	1890 lbs.	1891 lbs.
...
January	163,628	114,401	196,848	422,032½	794,483	1,352,746	2,663,041	3,293,325	5,597,122
February	140,576	99,117½	190,899½	357,766	717,088	1,476,404	2,089,616	3,156,583	5,126,132
March	94,775	167,629	280,142½	603,196	1,012,010½	1,321,030	3,522,929	3,407,883	4,189,829
April	91,154	206,864½	335,851	732,568	829,884	2,013,121	2,661,082	4,122,827	7,056,163
May	222,229	256,005½	580,607	691,330½	1,282,770	2,473,986	3,600,608	4,791,586	6,664,404
June	271,868	288,302	526,149½	1,080,109½	1,851,502½	2,588,331	3,685,857	4,996,447	7,075,081
July	136,067	362,757	388,167½	809,556	1,447,120	1,740,702	2,702,241	5,256,538	6,551,873
August	146,256	215,148½	379,854½	809,741½	1,065,321	2,115,833	2,792,904	3,400,975	5,834,674
September	142,230	174,067½	440,298	514,268½	897,076	1,826,333	1,604,117	2,944,883	4,599,953
October	70,090	185,774½	295,416½	628,312	1,027,056½	2,091,204	3,030,327	3,143,204	4,800,416
November	85,748	132,284	301,585½	593,117	1,402,210½	2,293,368	2,615,628	3,351,560	3,678,949
December	85,256	143,223½	359,122	603,251	1,346,813	2,373,520	3,087,979	3,524,275	5,847,181
Total	1,649,877	2,345,575½	4,274,941½	7,745,233½	13,673,342½	23,656,580	34,056,328	45,390,088	67,021,777
1st quarter...	398,979	381,147½	667,890½	1,382,984½	2,523,581½	4,190,180	8,275,585	9,857,791	14,913,083
2nd do	585,251	751,171½	1,442,607½	2,504,007½	3,964,158	7,025,438	9,947,547	13,910,860	20,795,048
3rd do	424,553	751,973½	1,298,320	2,133,561½	3,409,517	5,682,868	7,099,262	11,602,396	16,986,500
4th do	211,094	461,282½	956,124	1,724,680	3,776,086	6,758,092	8,733,934	10,019,039	14,326,546
Total	1,649,877	2,345,575½	4,274,941½	7,745,233½	13,673,342½	23,656,580	34,056,328	45,390,088	67,021,777
Galle	15,891	47,398	97,780	104,655	160,714½	163,897	289,524	409,431	697,594

SHIPMENTS OF CEYLON TEA CROPS, 1892-1900.

	1892	1893	1894	1895	1896	1897	1898	1899	1900
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
January	6,217,302	6,093,599	9,711,634	8,226,209	9,316,393	7,028,668	11,963,727	8,234,353	12,377,927
February	6,014,247	7,345,096	5,247,574	8,489,050	9,140,350	9,717,179	9,194,617	10,093,451	11,621,422
March	5,365,146	6,215,513	7,367,916	7,296,295	8,657,176	9,772,007	9,357,463	9,780,771	12,460,395
April	7,194,328	6,589,568	7,229,712	7,919,169	9,275,971	11,203,887	10,102,390	9,085,456	12,160,643
May	7,431,197	9,054,047	9,130,178	10,606,150	12,189,761	10,852,323	11,791,679	12,560,223	15,374,323
June	7,417,276	8,616,054	9,633,900	11,065,412	11,779,161	13,055,906	12,708,968	14,418,686	12,092,316
July	7,059,429	7,548,282	8,350,138	10,281,433	9,869,786	12,370,500	11,601,575	12,543,527	16,294,675
August	6,141,372	6,059,862	6,937,301	7,640,511	6,948,823	8,467,125	10,619,184	9,478,076	12,030,495
September	3,866,314	5,653,384	4,330,195	5,560,606	6,619,650	7,203,018	8,668,800	11,684,278	8,793,409
October	4,282,768	5,713,302	5,444,748	6,674,303	7,978,454	6,116,560	8,262,159	9,977,879	9,563,659
November	5,439,529	6,812,995	5,634,441	6,045,113	8,153,702	9,098,227	7,563,434	9,612,815	12,644,425
December	5,350,257	6,117,413	5,761,517	8,192,317	10,011,694	8,737,618	10,247,412	11,814,190	13,371,928
Total	71,809,465	81,819,195	84,978,454	98,356,568	109,936,831	114,223,098	122,081,408	129,313,705	148,785,617
1st quarter	15,596,995	19,654,208	22,327,224	24,311,554	27,113,919	27,117,854	30,515,807	28,108,575	36,459,744
2nd do	22,042,801	24,259,669	25,992,890	29,650,731	33,240,893	35,112,196	34,603,037	36,064,365	39,627,282
3rd do	17,097,115	19,161,628	19,817,634	23,482,550	23,438,239	28,040,643	30,889,559	33,705,881	37,118,579
4th do	15,072,554	18,643,710	16,840,706	20,911,733	26,143,750	23,952,405	26,073,005	31,434,884	35,680,012
Total	71,809,465	81,819,115	84,978,454	98,356,568	109,936,831	114,223,098	122,081,408	129,313,705	148,785,617
Galle	470,519	450,238	397,868	224,492	158,527	243,220	314,110	348,067	338,985

MONTHLY EXPORTS OF THE CEYLON TEA CROP FOR 1901.

		(CUSTOMS' FIGURES.)		
		Black	Green	Total
		lbs.	lbs.	lbs.
January	...	13,613,577	44,218	13,657,825
February	...	10,734,675	17,447	10,782,122
March	...	13,828,835	223,963	14,052,798
April	...	11,166,622	96,314	11,262,966
May	...	15,429,809	92,474	15,522,283
June	...	12,938,057	49,865	12,987,922
July	...	13,547,909	106,035	13,653,944
August	...	10,379,703	121,230	10,500,933
September	.	8,558,202	146,703	8,704,905
October	...	11,523,317	97,572	11,620,889
November	...	10,732,037	111,671	10,846,708
December	...	10,572,366	109,937	10,682,303
Total	...	113,025,109	1,250,489	144,275,598

LONDON IMPORTS AND DELIVERIES.

The following figures will show at a glance the London Imports and Deliveries of Indian and Ceylon teas for the four years 1898-1901, as also stocks held at the end of each year :-

LONDON IMPORTS.

		1901.	1900.	1899.	1898.
Indian	...	160,696,912	152,334,701	140,646,100	138,851,490
Ceylon	...	103,189,193	111,147,793	96,188,170	91,319,832
		263,886,105	263,482,494	236,834,270	233,171,322

LONDON DELIVERIES.

		1901.	1900.	1899.	1898.
Indian	...	157,583,806	144,704,803	140,481,161	139,089,130
Ceylon	..	108,461,449	105,930,027	94,225,004	93,488,012
		266,045,255	250,634,830	234,706,165	232,577,142

LONDON STOCK.

		1901.	1900.	1899.	1898.
Indian	..	73,000,000	69,923,000	61,484,000	61,319,000
Ceylon	..	19,600,000	24,861,000	19,187,000	17,724,000
		92,600,000	94,784,000	80,671,000	78,543,000

EXPORT OF TEA FROM ALL CHINA.

	1900-1901.		1901-2.
	lbs.		lbs.
To England ..	20,013,052	...	17,315,606
„ The Continent ...	10,111,051	...	6,084,664
„ Russia ..	32,297,736	..	30,552,347
„ America ..	16,187,123	...	33,126,706
„ Australia ..	6,514,722	...	2,036,969
„ South Africa .	1,378,864	...	1,707,242
	<hr/>		<hr/>
Total ...	116,802,548		90,853,534

INDIAN TEA CROP.

	1900.		1901.
	lbs.		lbs.
ASSAM ...	68,708,916	..	65,203,402
CACHAR ...	27,299,230	..	23,806,587
SYLHET	31,038,023	..	29,699,728
DARJEELING	7,738,018	...	7,323,512
TERAI	3,637,680		3,374,985
DOOARS	30,220,001	...	30,512,037
CHITTAGONG	1,065,300	...	831,020
CHOTA NAGPUR	185,089	.	218,187
KANGRA VALLEY ..	3,000,000	.	2,135,405
DEHRA DUN . . .	1,785,000	.	1,798,560
	<hr/>		<hr/>
Total...	177,677,257		165,263,453

The above figures give the actual outturn. As far as Assam, Cachar, Sylhet, Darjeeling, the Terai, the Dooars, Chittagong, and Chota Nagpur are concerned, the figures for each year represent the totals of returns submitted by 28 agency houses, while for Kangra Valley and Dehra Dun the figures have been furnished by the Local Planter's Association to the Indian Tea Association.

APPROXIMATE ESTIMATE OF THE TEA PRODUCTION OF THE WORLD, 1901.

(Ferguson's Directory.)

	Area cultivated.	Production.	Exports.
	Acres.	lbs.	lbs.
China	3,000,000	660,000,000	200,000,000
Japan and Formosa	650,000	130,000,000	65,000,000
India	535,000	193,000,000	185,000,000
Burmah and Andamans	20,000	2,000,000	200,000
Ceylon	392,000	147,500,000	146,000,000
Java	75,000	15,500,000	14,500,000
Natal	5,000	1,500,000	300,000
Fiji and Jamaica	500	600,000	—
Straits Settlements, Russia, United States & other producing countries	1,500	25,000	2,000
French Colonies, Annam, &c. ..	1,000	200,000	150,000
Total ..	4,680,000	1,150,325,000	611,152,000
South America (Brazil and Paraguay)			
for Mate Tea, indigenous or wild ...	1,000,000	80,000,000	30,000,000

TEA CONSUMPTION OF THE WORLD, 1901. lbs.

Australasia	34,500,000
British N. America	27,000,000
British West Indies, Guiana, and Honduras	300,000
British West and South Africa and adjacent Isles ..	4,500,000
West-Central Asia, apart from Russia	5,000,000
Thibet, Persia and East-Asia outside China and Russia ...	28,000,000
Ceylon	1,500,000
China	160,000,000
Europe, Continent of (apart from Russia)	24,000,000
India	8,000,000
Japan and Formosa	65,000,000
Java	1,000,000
N. Africa (Morocco, Algiers, Egypt, &c.)	1,500,000
Russia (in Europe and Asia)	145,000,000
South American States	2,000,000
Straits Settlements and E Archipelago	1,000,000
United Kingdom	255,000,000
Channel Islands	1,000,000
U. States, with Pacific Coast	84,000,000
Total ...	1,148,000,000

(Chemists require 100,000 lbs. of refuse tea per annum for Caffeina—)

CONSUMPTION OF TEA,

(BOARD OF TRADE STATEMENT.)

Year.	United Kingdom.	Russian Empire.	German Empire	Holland.	France.	United States (Year ended 30th June).
	lbs.	lbs	lbs.	lbs.	lbs.	lbs.
1884 ..	175,091,000	74,412,000	3,432,000	3,894,000	1,163,000	60,062,000
1885 ...	182,443,000	62,421,000	3,654,000	4,770,000	1,056,000	66,374,000
1886 ...	178,910,000	74,736,000	3,562,000	5,095,000	1,217,000	78,873,000
1887 ...	183,639,000	72,756,000	3,872,000	5,338,000	1,225,000	87,481,000
1888 ...	185,470,000	69,156,000	3,912,000	5,333,000	1,115,000	83,945,000
1889 ...	185,623,000	68,904,000	4,125,000	5,203,000	1,190,000	79,192,000
1890 ...	194,009,000	69,012,000	4,389,000	5,599,000	1,351,000	83,495,000
1891 ...	202,456,000	70,740,000	4,886,000	5,889,000	1,346,000	82,396,000
1892 ...	207,121,000	77,112,000	5,154,000	5,859,000	1,448,900	89,611,000
1893 ...	208,098,000	79,272,000	5,887,000	6,120,000	1,503,600	88,131,000
1894 ...	214,341,000	88,740,000	6,243,000	6,530,000	1,512,000	91,502,000
1895 ...	221,800,000	92,484,000	5,597,000	6,437,000	1,604,000	96,437,000
1896 ..	227,785,000	94,032,000	5,436,000	6,599,000	1,685,000	93,310,000
1897 ...	231,400,000	98,316,000	5,614,000	6,747,000	1,705,000	112,908,000
1898 ...	235,414,000	107,820,000	5,922,000	7,071,000	1,837,000	67,697,000*
1899 ...	242,561,000	104,436,000	6,039,000	7,102,000	1,917,000	72,835,000
1900 ...	219,792,000	125,784,000	6,719,000	7,665,000	2,405,000	83,303,000

*Duty imposed on Import from 13th June, 1898; to cease on 31st Dec., 1902.

BOARD OF TRADE RETURNS FOR 1899-1901.

IMPORTATION.			1899.	1900.	1901.
From India	...	...	113,500,000	155,000,000	161,500,000
do Ceylon	..	...	101,500,000	114,500,000	105,500,000
do China and Elsewhere		...	39,000,000	31,000,000	30,000,000
			284,000,000	300,500,000	297,000,000
Home Consumption of Indian		...	134,000,000	138,000,000	148,000,000
do do Ceylon		...	85,000,000	92,500,000	91,000,000
do do China, etc.		...	23,500,000	19,500,000	17,000,000
			242,500,000	250,000,000	256,000,000
Re exported of Indian		...	7,700,000	10,200,000	13,200,000
do Ceylon		...	12,200,000	13,500,000	18,100,000
do China, etc.		...	12,300,000	11,100,000	12,100,000
			32,200,000	38,100,000	43,400,000
Stock in Bond 31st December		..	113,000,000	119,500,000	116,000,000

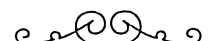
THE YEAR'S RE-EXPORTS.						
	INDIAN.		CEYLON.		OTHER KINDS.	
	1900.	1901.	1900.	1901.	1900.	1901.
To Europe ...	5,994,000	7,123,000	8,488,000	10,023,000	8,010,000	6,757,000
To United States ..	556,000	1,332,000	987,000	2,504,000	533,000	420,000
To British N. America	1,402,000	1,509,000	2,134,000	2,391,000	676,000	369,000
To Elsewhere	2,220,000	3,262,000	2,166,000	3,154,000	4,872,000	4,544,000
	10,172,000	13,226,000	13,775,000	18,072,000	14,111,000	12,090,000

DETAILED ACCOUNT OF THE EXPORTS OF TEA FROM THE UNITED KINGDOM.

	Twelve Months ended December 31st.		
	1898.	1899.	1900.
	lbs.	lbs.	lbs.
Of British East India—			
To Countries in Europe ...	4,443,836	4,108,264	5,993,530
United States of America ...	705,829	624,008	555,800
Canada ...	1,459,183	1,721,254	1,292,904
Other Countries ...	1,237,652	1,270,736	2,430,030
Total of British East India ..	7,846,500	7,724,262	10,272,264
Of Ceylon—			
To Countries in Europe ...	6,673,087	7,265,266	8,487,963
United States of America ...	1,299,716	1,391,930	987,500
Canada ...	1,865,460	1,837,562	1,820,531
Other Countries ...	1,684,933	1,649,631	2,479,421
Total of Ceylon ...	11,523,186	12,144,389	13,775,415
Of China—			
To Countries in Europe ...	9,122,760	5,983,793	12,419,220
United States of America ..	1,020,822	503,055	511,192
Canada ...	804,587	546,485	397,609
Other Countries ...	4,837,858	4,610,353	4,955,987
Total of China ...	15,786,027	11,643,686	18,284,008
Of Other Countries—			
To Countries in Europe ...	650,026	443,372	588,999
United States of America ...	163,010	24,338	21,764
Canada ...	109,224	47,861	32,154
Other Countries ...	256,929	196,297	182,593
Total of Other Countries ...	1,179,189	711,868	825,510
Total of Tea ...	36,334,902	32,224,205	43,157,197

DISTRIBUTION OF TEA EXPORTS FROM CEYLON
FROM 1st JANUARY TO END OF DECEMBER.

	1901.	1900.	1899.	1898.
United Kingdom ...	105,731,570	113,760,193	103,948,124	96,133,833
Austria . . .	50,958	24,633	8,231	14,873
Belgium ..	17,781	22,951	11,124	13,590
France	317,866	326,800	98,952	100,001
Germany ..	586,104	402,717	316,959	352,252
Holland	19,041	2,000	30,211	26,351
Italy . . .	13,924	8,332	13,521	6,730
Russia	9,653,896	8,917,185	3,919,740	2,714,003
Spain	250	17,730	18,700	11,650
Sweden	65,104	71,300	78,088	12,171
Turkey	10,978	17,009	18,733	73,971
India	1,139,113	1,144,013	567,616	1,091,559
Australia ..	20,652,804	17,606,912	15,606,833	15,126,591
America	1,502,131	3,980,680	3,080,002	2,180,188
Africa	305,730	280,699	288,239	372,212
China	2,691,819	1,262,163	1,381,490	1,185,115
Singapore ...	117,560	119,178	83,813	59,867
Mauritius ...	55,376	17,323	100,218	33,299
Malta	312,633	119,518	257,232	196,852
Total lbs. ...	116,310,638	118,431,639	129,894,156	119,769,071



AVERAGE ANNUAL CONSUMPTION OF TEA IN ENGLISH POUNDS.

	1893.	1894.	1895.	1896.	1897.	Approximate duty in pence per English pound.
Australia	24,653,142	23,708,638	23,819,486	22,026,617	22,976,569	Free
New Zealand	4,284,028	3,667,582	4,467,347	4,380,781	4,652,115	2d.
Tasmania	916,712	924,888	971,265	951,168	.....	3d.
Great Britain	208,097,385	214,341,044	221,800,140	227,785,509	231,399,778	6d.
Newfoundland	903,950	970,850	837,993	945,005	969,565	30 % ad. valorem
Canada	18,049,854	20,551,739	20,595,770	22,668,171	24,344,982	from country of pro- duction and U. K.
U. S. A	88,133,088	91,801,565	96,437,402	93,340,248	112,907,548	free, otherwise 10%.
Holland	6,139,414	6,600,876	6,457,718	6,608,985	6,769,011	5d.
Cape Colony	1,864,720	1,787,785	2,499,598	2,933,000	2,299,369	2½d.
Natal	283,056	277,220	179,025	1,148,543	386,351	8d.
Russia	79,809,048	88,744,284	92,487,942	94,042,188	98,315,840	7d.
Denmark	904,031	938,788	939,426	917,324	994,819	2½d. to 2s. 10d.
Uruguay	199,214	189,741	160,869	187,945	142,836	4½d.
Argentina	1,052,800	1,265,600	1,512,000	1,982,400	1,108,800	6½d.
Portugal	603,857	623,772	587,238	603,702	592,166	1/7½—1/11½d.
Switzerland	472,259	524,563	549,516	564,726	617,030	1½d.
Norway	232,960	226,240	257,600	255,360	257,600	9½d.
Germany	6,206,659	6,247,494	5,690,249	5,792,640	5,857,756	6d.
Morocco	283,600	206,950	254,900	227,950	91,800	10 % ad. val.
Belgium	142,380	170,588	157,488	130,423	102,344	Free
Sweden	329,750	350,649	371,436	365,478	416,819	3—4½
France	1,491,840	1,527,680	1,566,920	1,664,320	1,688,960	11½—1/16½d.
Austria Hungary	1,739,848	1,880,771	1,991,442	1,985,765	2,069,406	9d.
Bulgaria	169,635	215,219	63,593	98,067	141,971	30 % ad. val.
Spain	133,022	231,024	190,093	185,167	194,712	10—11½d.

QUANTITY OF TEA IMPORTED FOR HOME CONSUMPTION INTO THE UNDERMENTIONED COUNTRIES IN THE YEARS 1899 AND 1900.

	1900 lbs.	1899 lbs.	Per head of Population lb.	Approximate duty in pence per English lb.
Australian Colonies	28,123,000	27,348,000	7.98	Now Free
New Zealand ..	5,175,000	4,799,000	6.78	2d.
Tasmania ...	1,143,000	1,078,000	6.62	Now Free
Great Britain ...	249,792,000	242,561,000	6.10	6d.
Newfoundland ..	949,612	1,031,652	4.52	33 % ad. valorem
Canada ...	24,968,000	25,056,000	4.61	} From country of pro- duction Free. Other } 10 % ad. valorem
Bermuda ...	88,480	90,720	5.31		5 % ad. valorem
United States ...	83,303,000	72,836,000	1.09	5d. free from 1/1 0/3
Holland ...	7,665,000	7,073,000	1.48	2½d.
Cape Colony ...	3,327,221	2,117,471		6d.
Natal ...	410,390	484,486	0.44	6d.
Russia ...	125,781,000	104,436,000	0.93	2½d.—1/10½d.*
Denmark ...	1,000,616	986,290	0.40	1d
Argentine Republic	2,139,078	1,534,764	0.54	4½d.
B. Honduras ...	32,954	27,469	0.89	2.28/81d.
Barbadoes ...	44,820	55,850	0.23	3d.
Trinidad & Tobago..	72,937	66,270	0.25	6d.
Antigua ...	4,347	5,474	0.12	6d.
British Guiana ...	54,443	Not available	0.18	6d.
Portugal ...	622,517	584,943		2/0½d.
Bahamas ...	10,660	8,291		1/0d.
Switzerland ...	747,500	681,478	0.22	1¾d.
Norway ...	275,500	260,000		1/-

(Continued on next page.)

* The following duties are also leviable :—Tea, imported over the Siberian frontier and the frontier of the Government of the Steppes :—

Black (Baicha) tea, flower tea, green, and yellow tea imported across the frontiers of the Steppes, Irkutsk and the Amour ...	1s. 1d.
Other Black, green, or yellow tea ...	1s. 1½d.
Tea in tablets, if bearing the marks of Russian Manufacturers on each tablet ...	10½d.
Brick tea ...	2½d.

QUANTITY OF TEA IMPORTED FOR HOME
CONSUMPTION INTO THE UNDERMENTIONED
COUNTRIES IN THE YEARS 1899 AND 1900.
(Continued.)

	1900 lbs.	1899 lbs.	Per head of Population lbs.	Approximate duty in pence per English lb.
Germany ...	6,719,000	6,039,000	0·12	5½d.
Grenada ...	Not available	5,226	0·08	6d.
St. Vincent ...	3,979	3,471	0·08	6d.
Jamaica ...	45,170	47,958	0·06	1/-
Belgium ...	1,194,186	649,393	0·19	Free
Sweden ...	476,659	444,125	0·21	3d.
France ...	2,405,000	1,947,000	0·06	9—11¾d.
Austria-Hungary ...	2,347,700	2,051,703	0·05	9¾d.—11¾d.
Bulgaria ...	79,449	82,716		4¾d. and 10 % ad. val.
Spain ...	450,047	145,259		6½d.
Italy ...	107,996	91,686	0·03	8¾—11¾d.
Greece ...	10,743		0·04	1/1½—1/6d.
Mauritius ...	55,353	130,307		about 3d.
Sierra Leone ...	10,500	14,392	0·14	Free
India ...	3,203,111	3,659,442		5 % ad. valorem
Straits Settlements	6,549,984	6,708,933		Free
Ceylon ...	432	906		4d.
Lagos ...	Not available	3,200		1d.
St. Lucia ...	8,441	8,467	0·17	6d.
Virgin Islands ...	53	67		3d.
St. Kitts—Nevis ...	6,882	7,984		6d.
Montserrat ...	974	470	0·08	4d.
Dominica ...	1,809	1,372	0·06	6d.
Cyprus ...	3,935	4,044		6d.

The Tea duty in countries not included above is in Roumania 2½d. Turkey 8 per cent. ad. val. Fiji 3d. Zanzibar 6d. Uruguay 5¾d. West Indies 1/. Egypt 1/. West African Settlements 5 per cent. ad. val. Morocco 10 per cent ad. val. Brazil 48 per cent. ad. val. Chili 25 per cent. ad. val. .

The following places exact no duty :—

Gibraltar, Malta, Aden, and Central America.

AMERICA.

UNITED STATES DEPARTMENT OF AGRICULTURE, SECTION
OF FOREIGN MARKETS, WASHINGTON, D. C.

Consumption of Tea in the United States

Years ended June 30th.	Net Imports. Pounds.	Consumption per capita Pounds.
1860	26,326,928	·84
1861	21,016,667	·66
1862	23,336,777	·71
1863	27,021,040	·80
1864	35,851,022	1·04
1865	16,819,189	·49
1866	41,511,148	1·17
1867	39,379,571	1·09
1868	35,625,863	·96
1869	40,810,025	1·08
1870	42,540,471	1·10
1871	44,894,945	1·11
1872	59,369,602	1·46
1873	63,754,940	1·53
1874	54,141,353	1·27
1875	63,291,304	1·14
1876	61,16,0245	1·35
1877	56,838,175	1·23
1878	63,123,188	1·33
1879	58,891,535	1·21
1880	69,891,769	1·39
1881	79,130,819	1·54
1882	77,191,060	1·47
1883	69,597,945	1·30
1884	60,061,944	1·09
1885	66,374,365	1·18
1886	78,873,151	1·37
1887	87,481,186	1·49
1888	83,944,547	1·40
1889	79,192,253	1·29
1890	83,944,956	1·33
1891	82,395,921	1·29

AMERICA.—(Contd.)

Years ended June 30th.	Net Imports. Pounds.	Consumption per capita Pounds.
1892	89,610,741	1·37
1893	88,131,088	1·32
1894	91,801,565	1·34
1895	96,437,042	1·38
1896	93,340,248	1·31
1897	112,907,548	1·55
1898	67,697,295	·91
1899	72,834,816	·96
1900	84,843,491	1·09
1901	89,084,947	1·17

NOTE.—Duty imposed on Import from 13th June, 1898.

TEA STATISTICS OF THE UNITED STATES.

Quantities and Values of tea imported into and exported from, and net imports into the United States, 1899 to 1901 inclusive.

Year ending 30th June.	Imports. lbs.	Exports. lbs.	Net Imports. lbs.	Average import price per lb, in cents.
1899	74,089,899	1,255,033	72,834,816	13·1
1900	86,387,037	1,541,930	84,845,107	12·4
1901	90,381,270	1,296,323	89,084,947	12·2
	Dollars.	Dollars.	Dollars.	
1899	9,675,081	151,768	9,523,313	
1900	10,558,110	232,123	10,325,987	
1901	11,014,981	152,526	10,862,455	

1901 IMPORTS.—China 52 %, Japan 37 %, Other Countries 11 %.

TEA IN RUSSIA.

(FROM MR. CHRISTIE'S REPORT.)

Import of tea at the European Frontiers of the Russian Empire during the period 1887-1896 :—

Frontiers.	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896
	Thousands of Pounds.									
Baltic	54	43	30	36	43	64	69	45	33	59
Russo-Prussian	167	255	188	213	96	124	127	111	107	143
Russo-Australian	0	0	0	0	0	0	0	0	1	1
Black Sea	370	496	519	662	725	472	641	664	786	683
Azov	0	7	4	1	5	5	3	3	3	1
Total	591	801	741	912	869	665	840	823	928	887

Table showing the quantity of tea imported into the whole of the Russian Empire during the year 1896 :—

	Green tea of high quality.	Green tea of low quality.	Black Tea.	Brick Tea.	Slab Tea.
	lbs.	lbs.	lbs.	lbs.	lbs.
At European Custom Houses			887,208		
„ Finnish do ...			1		
„ Caucasian do ...	93,654	12,467	2,259		
„ Trans-Caspian do ...	19,224	1,567	4,406		
„ Turkestan do ...	1,120	705		77	
„ Semipalatinsk do ...			472	5,832	
„ Irkutsk do ...			549,808	981,908	45,422
Total lbs. ...	113,998	14,739	1,141,154	987,817	45,422

From these quantities after inspection were forwarded for clearance (1) to the Ashkhabad Custom House 28,554 pounds and to the Bokhara Custom House 42,676 pounds ; (2) to the Bokhara Custom House 12,062 pounds.

Table Showing the Quantity of Tea on which Duty was paid as also its Value on Importation into Russia during the period of 1894—1896.

	Quantity in pounds.				Value in paper roubles.				Amount of duty paid in gold currency.		
	1896.	1895.	1894.	1896.	1895.	1894.	1896.	1895.	1894.		
	Tea of all kinds ...	891,000	806,000	842,000	18,819,000	16,603,000	17,375,000	18,709,638	16,922,415	17,684,772	
At the	544,000	526,000	448,000	11,207,000	10,353,000	9,323,000	7,073,683	6,838,193	5,820,957		
Iraktsk	994,000	926,000	963,000	8,423,000	7,955,000	8,334,000	2,484,338	2,315,578	2,407,263		
Custom House	44,100	46,000	46,100	623,000	643,000	640,000	441,175	460,282	461,313		

CONSUMPTION.

1896 Russia excluding Finland..... }
 52,000,000 lbs. leaf teas.
 40,000,000 lbs. brick teas.

92,000,000 lbs.

Population 126,683,000 = .73 lb. per head.

Finland imported 179,000 lbs. with a population of 2,527,000 averaging .07 lb. per head.

CEYLON TEA IN SCANDINAVIA.

(BY MR. J. H. RENTON.)

Sweden Tea Imported	1899	1900
From	Kilos.	Kilos.
Norway	1,106	1,242
Finland	675	3,522
Russia	22	687
Germany	61,598	60,618
Denmark	55,117	52,018
Holland	5,659	7,820
Belgium	7,201	11,056
Great Britain	67,105	76,084
France	26	223
Total	201,509	216,270

The population of Sweden is just over five millions. The consumption of about .09 English pound per head. Duty about 3d. per English pound.

Norway Tea Imported	1899	1900
From	Kilos.	Kilos.
Sweden	1,656	4,799
Denmark	20,310	18,805
Germany	51,884	58,571
Holland	2,091	1,610
Belgium	7,262	907
Great Britain	31,030	38,960
East India, China & Asia	673	807
Other Countries	51	17
Russia	108	339
Total	118,095	121,875

The consumption in 1900 was 274,725 English pounds. The population was 2,000,000 averaging .13 of an English pound per head. Duty is about 1s. per pound.

Denmark. Tea entered for home consumption was :—

	1900,	1899.	1898.
Danish Lbs.	910,000	900,000	990,000

Population 2½ millions = .35 of an English pound per head. Duty about 1½d. per pound.

NOTES.

COMPANIES.

NOTES.

DIVIDENDS, &c.—(October, 1902.)

Name of Company.	Paid-up Capital.	Acres in Cultivation.	Amount of Share.	Paid up per Share.	Reserve.	Financial Year Closes.	DIVIDENDS. %					
							1897/8	1898/9	1899/00	1900/1	1901/2	Interim 1902/3
Alliance Tea Co.	£ 65,260	2,734	10	10	...	Dec. 31	6	7	8	7	6	3
6 p. c. Debs. £41,900	...	...	100	100	...	...	6	6	6	6	6	3
Anglo-Ceylon General Estates	250,000	10,747	100	100	20,000	Mar. 31	nil	4	4	4	4	...
6 p. c. Debs., £150,520	...	...	100	100	...	...	6	6	6	6	...	...
4½ p. c. Debs., £16,600	...	...	100	100	...	...	4½	4½	4½	4½	...	...
Assoc. Tea Estates of Ceylon	50,000	1,968	10	10	...	June 30	2½	nil	nil	nil	nil	...
Do 6 p. c. Preference	60,000	...	10	10	...	...	6	6	*3	nil	nil	...
Bandarapolla Tea Co.	7,000	788	10	10	2,000	Dec. 31	10	5	10	nil	6	...
Do Cocoa	...	224	...	...	...	...	...	...	...	...	...	...
Do Do	14,000	...	10	5	...	...	10	5	10	nil	6	...
5 p. c. Debs. £14,000	...	...	50	50	...	...	5	5	5	5	...	...
Battalgalla Estate Co.	15,000	610	10	10	...	Dec. 31	10	10	10	10	5	...
Do Coffee and Tea	...	40	...	...	...	...	...	...	...	...	...	...
5 p. c. Debs. £4,000	...	...	100	100	...	...	5	5	5	5	5	2½
Bogawantalawa District T Co.	100,000	2,282	10	10	4,500	Mar. 31	6	7½	7½	6	4	...
6 p. c. Preference	93,000	...	10	10	...	...	6	6	6	6	6	...
6 p. c. £7,000 Debs.	7,000	...	10	10	...	...	...	...	6	6	6	...
Burnside Tea Co. of Ceylon	6,000	1,126	10	10	...	Dec. 31	7	2	5	2	nil	...
Do Do Do	11,600	...	10	5	...	...	7	2	5	2	nil	...
†6 p. c. Debs., £14,400	...	...	50	50	...	...	5	5	5	5	...	2½
Caledonian (Cey.) Estates, Ltd.	35,000	1,790	10	10	...	June 30	3	2	nil	nil	...	...
Do 6 p. c. Preference	32,000	...	10	10	...	...	6	6	6	6	...	...
Do 5 p. c. Debs., £40,000	...	...	100	100	...	...	5	5	5	5	5	...
Carolina Tea Co.	50,000	2,431	10	10	9,600	June 30	5	7	6	nil	5	...
Do Coffee, Cocoa & Tea	...	177	...	...	...	...	...	...	...	...	...	...
Do Deferred	10,000	...	10	10	...	...	nil	nil	nil	nil	...	...
Do 7 p. c. Debs., £35,000	...	...	100	100	...	...	7	7	7	7	7	3½
Central Province	50,000	2,192	10	10	...	June 30	nil	3	2	nil	nil	...
Do 6 p. c. Preference	50,000	...	10	10	...	...	6	6	6	6	...	...
Central Tea Co. of Ceylon	22,500	900	10	10	...	June 30	6	6	6	nil	nil	...
Do 6 p. c. Preference	22,500	...	10	10	...	...	6	6	6	6	...	...
Ceylon Land and Produce	5,500	2,393	5	5	20,000	June 30	20	20	15	15	15	...
Do Cocoa and Coffee	19,200	...	5	3	...	...	20	20	15	15	15	...
Do 6 p. c. Preference	43,160	1,701	...	...	...	...	6	6	6	6	...	3
Debs. 3½ & 4 £12,125	...	...	50	50	...	...	...	...	...	...	...	...
2nd M Dbs. 4, 4½ & 5 £4,915	...	...	...	...	...	...	...	...	...	...	...	...
Ceylon & Indian P. A.	40,000	1,711	10	10	...	June 30	...	2	2	nil	...	...
6 p. c. Preference	25,000	...	10	10	...	...	...	6	6	6	...	...
5 p. c. Debs., £42,820	...	...	100	100	...	...	...	5	5	5	...	...
Ceylon Estates Investment	30,000	750	1	16½	...	Mar. 30	3¾	4½	5	3	nil	...
Ceylon Proprietary Tea Estates	78,380	2,165	1	1	...	Dec. 31	5	4	5	3	nil	...
5 p. c. Preference	26,127	...	1	1	...	...	5	5	5	5	5	2½
†6 p. c. Debs., £15,000	...	...	100	100	...	...	...	5	5	5	...	3
Ceylon Tea Plantations	167,380	8,962	10	10	100,000	Dec. 31	15	15	18	15	15	7
Cocoanuts	...	2,239	...	...	...	...	...	...	...	...	...	...
7 p. c. Preference	81,080	...	10	10	...	...	7	7	7	7	7	3½
Consolidated Estates	39,000	3,835	10	10	1,500	June 30	2	5	5	nil	4	...
8 p. c. Preference	37,000	...	10	10	...	...	8	8	8	8	...	...
6 p. c. Debs., £33,000	...	...	100	100	...	...	6	6	6	6	6	3
5 p. c. Debs., £17,800	...	...	100	100	...	...	...	...	5	5	5	2½
Dimbula Valley Tea Co.	114,665	2,214	5	5	5,000	Dec. 31	7	10	10	†7½	8	4
6 p. c. Preference	57,335	...	5	5	...	...	6	6	6	6	6	3
Duckwari Tea Plantations	8,000	852	10	10	700	June 30	5	7	7	nil	2½	...
Do Cardamoms	...	70	...	...	...	...	...	...	...	...	...	...
7 p. c. Preference	12,000	...	10	10	...	...	7	7	7	5	...	...
6 p. c. Debs., £5,400	...	...	100	100	...	...	6	6	6	6	...	...
Eastern Produce & Estates	298,250	11,028	5	5	25,000	Dec. 31	7	7	7	3½	3	1¼
Do Cocoa	...	593	...	...	...	...	...	...	...	...	...	...
Do Cardamoms & Coffee	...	327	...	...	...	...	...	...	...	...	...	...
5 p. c. Preference	753	...	5	1	...	...	5	5	5	5	5	2½
4½ p. c. Debs., £72,500	...	...	100	100	...	...	4½	4½	4½	4½	4½	2½
Ederapolla Tea Co. of Ceylon	22,000	1,057	10	10	1,300	Dec. 31	5½	5	8	3	5	...
Do Do	3,500	...	10	5	...	...	5	5	8	3	5	...
5 p. c. Debs., £3,500	...	...	100	100	...	...	5	5	5	5	5	...
Galaha Tea Estates & Agency Co.	50,000	2,867	10	10	6,700	Dec. 31	2½	‡4	7	nil	3	...
Cardamoms	...	235	...	...	...	...	...	...	...	...	...	...
6 p. c. Preference	60,000	...	10	10	...	...	6	6	6	6	6	3
5 p. c. Debs., £55,000	...	...	100	100	...	...	5	5	5	5	5	2½
Galkandewatte Tea Co.	15,000	390	1	1	250	Mar. 31	...	...	...	8	10	...
6 p. c. Preference	6,000	...	1	1	...	...	...	...	...	6	6	...
General (Ceylon) Tea Estates	109,750	5,843	5	5	5,000	Dec. 31	...	nil	nil	nil	nil	...
6 p. c. Preference	129,270	...	5	5	...	...	...	nil	nil	nil	nil	...
5 p. c. Debs., £140,000	...	...	100	100	...	...	...	5	5	5	5	2½

*On account.

†Interest raised on renewal.

‡For nine months.

§For 18 months.

DIVIDENDS, etc.—(October, 1902.)

Name of Company.	Paid-up Capital.	Acres in Cultivation.	Amount of Share.	Paid up per Share.	Reserve.	Financial Year Closes	DIVIDENDS. %					
							1897/8	1898/9	1899/00	1900/1	1901/2	Interim 1902/3
Haputale Co. ...	£ 8,834	1,100	£ 2	£ 1	...	Dec. 31	nil	nil	nil	nil	nil	...
Do Coffee ...	...	300	...	...	...	...	...	...	...	...	...	...
6 p. c. Preference ...	57,713	...	6½	6½	...	...	6	6	6	1	...	...
5 p. c. Debs., £7,700 ...	...	...	100	100	...	...	5	5	5	...	...	...
Highland Tea Co. ...	32,000	586	10	10	500	Dec. 31	7	5½	7	6	4	2
Hornsey Tea Estates ...	12,000	473	5	5	...	June 30	3	2	1½	nil	...	...
6 p. c. Preference ...	8,000	...	5	5	...	...	6	6	6	6	...	...
5 p. c. Debs., £10,000 ...	...	...	50	50	...	...	5	5	5	5	5	2½
Hunasgeria Tea Co. ...	22,728	763	1	1	...	Dec. 31	...	...	...	...	...	...
6 p. c. Preference ...	6,000	...	1	1	...	...	nil	nil	*12	nil	nil	...
Imperial Ceylon Tea Estates...	90,000	1,812	10	10	...	Dec. 31	4	4	4	2½	3	...
6 p. c. Debs., £5,000 ...	...	...	100	100	...	...	...	6	6	6	6	...
Kelani Valley Tea Association	2,530	1,154	10	10	4,500	Dec. 31	10	5	10	3	nil	...
Do Do ...	16,235	...	10	5	...	...	10	5	10	3	nil	...
5 p. c. Debs., £13,700 ...	...	...	100	100	...	...	5	5	5	5	...	2½
Kintyre Tea Estates ...	45,000	876	10	10	...	June 30	5	8	6	5	3½	...
5 per cent. Preference ...	20,000	...	10	10	...	...	5	5	5	5	5	...
Korale Estates ...	13,000	1,308	5	5	...	June 30	nil	nil	nil	nil	nil	...
6 p. c. Preference ...	47,885	...	5	5	...	...	*3	*5	*3	nil	...	...
Lanka Plantations—Tea ...	150,000	2,334	10	10	...	June 30	2½	4	4	2½	2	...
Do Do Cocoa ...	...	751	...	...	...	...	...	...	...	...	...	...
Do Do Coffee ...	...	55	...	...	...	...	...	...	...	...	...	...
6 p. c. Preference ...	14,700	...	10	10	...	...	6	6	6	6	...	...
Mayfield Tea Co. ...	30,620	1,168	10	10	...	Dec. 31	5	nil	5	3	nil	...
6 p. c. Preference ...	33,000	...	10	10	...	...	6	6	6	6	6	...
Madulsima Coffee and Cinchona Co. ...	68,000	1,400	10	10	...	Dec. 31	...	...	...	...	...	...
8 p. c. Preference ...	28,700	...	5	5	...	...	...	...	...	8	...	...
5 p. c. Debs., £14,000 ...	...	...	100	100	...	...	...	...	...	5	...	...
Maturata ...	8,000	283	5	5	...	June 30	...	...	...	10	10	...
6 p. c. Preference ...	4,000	...	5	5	...	...	...	...	...	6	...	...
New Dimbula Co. ...	78,954	2,345	1	1	6,000	June 30	16	20	23	22	20	...
Nuwara Eliya Tea Estates ...	200,000	2,602	10	10	9,400	Dec. 30	6	6	7	7	6	...
6 p. c. Debs., £30,000 ...	...	...	100	100	...	...	6	6	6	6	6	3
Ouvah Coffee Co.—Tea ...	100,000	2,190	10	10	4,000	Mar. 31	4	3½	6	6	6	...
Do Coffee & Cocoa ...	...	340	...	...	...	...	...	...	...	...	...	...
Panawal ...	17,000	590	10	10	1,500	Dec. 3	2	4	10	4	3	...
7 p. c. Preference ...	5,300	...	10	10	...	...	7	7	7	7	7	3½
Poonagalla Valley Ceylon Co. ...	10,000 } 12,590 }	1,149	10	10	...	Dec. 31	3	4	5	2	nil	...
Do Coffee ...	...	108	...	...	...	...	...	...	...	...	...	...
6 p. c. Debs., £12,500 ...	...	...	50	50	...	...	6	6	6	6	...	...
Portmore Tea Co ...	40,000	502	1	1	...	Dec. 31	...	...	...	13	12	5
Pundaloya Tea Company ...	66,000	1,853	10	10	6,000	Dec. 31	6	6	6	6	4	...
6 p. c. Preference ...	33,000	...	10	10	...	...	6	6	6	6	6	3
Ragalla Tea Estates ...	39,000	1,651	10	10	...	...	nil	nil	nil	6	4½	...
6 p. c. Preference ...	35,000	...	5	5	...	...	6	6	6	6	6	3
6 p. c. Debs., £32,000 ...	...	...	100	100	...	...	6	6	6	6	6	3
Rangalla Tea Company ...	22,000	772	10	10	...	Dec. 31	6	nil	5	4	4	...
Scottish Ceylon Tea Company ...	41,000	1,720	10	10	7,000	Dec. 31	10	10	12	10	8	3½
7 p. c. Preference ...	9,000	...	10	10	...	...	7	7	7	7	7	3½
Scottish Trust and Loan Co. ...	45,000	2,928	5	3	11,000	Aug. 31	10	10	10	10	6	...
...	...	2,058	...	...	...	...	...	...	...	...	...	...
...	...	(under tea)	...	...	...	...	...	...	...	...	...	...
South Wanarajah ...	20,000	866	10	10	...	Dec. 31	5	5	7	5	5	...
6 p. c. Preference ...	7,000	...	10	10	...	...	6	6	6	6	6	...
5 p. c. Debs., £18,000 ...	...	...	100	100	...	...	...	...	...	...	5	...
Spring Valley Coffee Co.—Tea ...	80,000	1,911	10	10	4,012	Dec. 31	2½	1½†	...	2½	1½	...
6 p. c. Preference ...	15,000	...	10	10	...	...	6	6	6	6	6	...
Standard Tea Co.—Tea ...	20,500 } 39,000 }	2,509	10	10	12,400	Dec. 31	15	15	15	15	15	5
Do do Ordinary ...	50,000	...	10	6	...	...	15	15	15	15	15	5
Sunnygama Tea Company ...	15,000	1,752	10	10	...	Dec. 31	6	3	4	nil	nil	...
6 p. c. Preference ...	15,000	...	10	10	...	...	6	6	6	6	6	...
5 p. c. Debs., £10,000 ...	...	...	100	100	...	...	5	5	5	5	5	2½
United Planters of Ceylon ...	156,400	6,340	10	10	3,000	Dec. 31	2½	2½	5	5	...	...
5 p. c. Debs., £174,600 ...	...	...	50	50	...	...	5	5	5	5	5	2½
Vellikellie Tea Company ...	35,250	578	10	10	...	Dec. 31	...	...	...	...	...	...
6 p. c. Preference ...	4,750	...	10	10	...	...	...	...	...	...	6	...
Yatiantota ...	90,000	2,970	10	10	45,000	Dec. 31	2	4	7	4	2½	...
6 p. c. Preference ...	45,000	...	10	10	...	...	6	6	6	6	6	3

* On account.

† 17 months.

Authorised	Paid up	Extensn. and Reserve.	Total Acres.	Culti- vated.	Name of Company.	Par.	Paid up.	B.	S.	T.	Div. 1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	Year Closes.	
Rs.	Rs.	Rs.				Rs.	Rs.	Rs.	Rs.	Rs.											
750,000	375,000	47,500	524	487	Agra Ouvah Estates Company, Limited	500	500	850	900	...	16 o/o	20 o/o	22 o/o	17 o/o	18 o/o	20 o/o	20 o/o	18 o/o	7 o/o ½ year	December	
240,000	240,000	2,841	526	480	Castlereagh Tea Company, Limited	100	100	...	...	...	8 o/o	15 o/o	14 o/o	6 o/o	7 o/o	12 o/o	8 o/o	8 o/o	4 o/o ½ year	December
500,000	348,000	...	1,126	995	Ceylon Tea & Coconut Estates Co., Ltd.	500	500	...	...	...	...	...	Nil	Nil	Nil	Nil	Nil	Nil	...	December
1,000,000	666,000	102,463	1,117	1,004	Ceylon Provincial Estates Company, Ltd.	500	500	...	505	505	...	...	9 o/o	7½ o/o	7½ o/o	8 o/o	9 o/o	9 o/o	3 o/o ½ year	December
130,000	65,000	£3,000 Mort. Debts.	336	246	Claremont Estates Company, Limited	100	100	...	...	...	...	...	Nil	Nil	Nil	Nil	Nil	Nil	...	December
350,000	332,000	20,000	1,309	891	Clunes Tea Company, Limited	100	100	50	60	...	20 o/o	15 o/o	12 o/o	97/98 8 o/o	8 o/o	8 o/o	Nil	Nil	...	June	
300,000	270,000	...	715	546	Clyde Tea Estates Company, Limited	100	100	25	...	...	...	...	8 o/o	6½	4 o/o	2½ o/o	Nil	2½ o/o	...	December
500,000	400,000	12,500	987	746	Doomoo Tea Company of Ceylon, Limited	100	100	65	...	...	...	95/96 6 o/o	96/97 6 o/o	97/98 6 o/o	98/99 6 o/o	99/99 7 o/o	900/901 7 o/o	...	...	June
750,000	715,000	2,000	1,116	987	Drayton Estates Company, Limited	100	100	...	...	...	14 o/o	15 o/o	11 o/o	9 o/o	11 o/o	15 o/o	8 o/o	8 o/o	...	December
300,000	300,000	25,011	1,279	931	Eila Tea Company, Limited	100	100	25	...	...	15 o/o	13 o/o	7 o/o	Nil	8 o/o	5 o/o	Nil	Nil	...	June
750,000	710,500	30,000	2,811	1,882	Estates Company of Uva, Limited	500	500	210	...	...	...	8 o/o	7 o/o	4 o/o	2 o/o	3 o/o	4 o/o	4 o/o	...	December
325,000	325,000	85,000	714	650	Glasgow Estate Company, Limited	500	500	950	...	...	18½ o/o	18 o/o	17 o/o	15 o/o	15 o/o	18 o/o	18 o/o	18 o/o	7 o/o ½ year	December
584,000	584,000	52,500	1,082	977	Great Western Tea Company, Limited	500	500	659	...	650	18 o/o	18 o/o	13 o/o	6½	6½ o/o	10 o/o	900/901 10 o/o	11 o/o 901/902	...	March	
500,000	178,500	...	355	355	Gangawatta Estates Company, Limited	100	100	...	...	...	...	...	10 o/o	8 o/o	6 o/o	6 o/o	7 o/o	7 o/o	...	December
170,000	170,000	4,000	754	385	Hapugahalande Tea Company, Limited	200	200	...	...	...	...	20 o/o	20 o/o	12 o/o	9 o/o	12 o/o	10 o/o	5 o/o 900/901	5 o/o 901/902	June
1,000,000	750,000	...	1,632	1,180	High Forests Tea Company, Limited	500	500	500	...	...	...	...	2½ o/o	2 o/o	4 o/o	5 o/o	7 o/o	5 o/o	2½ o/o ½ year	December
400,000	400,000	...	905	853	Horrekelly Estate Company, Limited	100	100	105	110	...	5 o/o	7 o/o	10 o/o	5 o/o	6 o/o	5 o/o	6 o/o	6 o/o	...	December	
750,000	400,000	20,000	1,084	682	Kalutara Company, Limited	500	500	240	...	...	...	...	4 o/o	Nil	3 o/o	7 o/o	Nil	2½ o/o	...	December
300,000	27,500	...	...	...	Do do % Prefs	500	500	...	...	...	...	...	...	7 o/o	7 o/o	o/o	7 o/o	7 o/o	3½ o/o ½ year	December
50,000	125,000	£4,000 P.M.	1,310	525	Kandyan Hills Tea Company, Limited	100	100	...	40	...	...	...	Nil	Nil	6 o/o	Nil	...	...	...	December
300,000	50,000	...	...	...	Do do Debts 7 %	500	500	...	...	...	...	...	5 o/o	5 o/o	5 o/o	Nil	Nil	...	...	December
300,000	300,000	...	746	422	Kelani Tea Garden Company, Limited	100	100	...	...	...	...	...	5 o/o	2 o/o	2 o/o	5 o/o	Nil	2 o/o	3 o/o ½ year	December
150,000	100,000	...	717	570	Kirklees Estates Company, Limited	100	100	100	...	...	...	12½ o/o	13 o/o	15 o/o	4 o/o	9 o/o	Nil	2 o/o	3½ o/o ½ year	December
500,000	24,700	...	...	...	Do do o/o Prefs	100	100	...	...	...	...	...	7 o/o	...	...	7 o/o	7 o/o	3½ o/o ½ year	December	
340,000	415,000	17,506	594	486	Knavesmire Tea Company, Limited	100	100	...	45	...	...	...	7 o/o	5 o/o	2½ o/o	5 o/o	4 o/o	4 o/o	...	December
300,000	334,000	25,000	418	357	Kanapediwatte Tea Company, Limited	100	100	45	...	...	...	...	...	9 o/o	10½	6 o/o	5 o/o	...	...	December
300,000	300,000	5,000	958	707	Maha Uva Estate Company, Limited	500	500	...	...	...	8 o/o	16 o/o	9 o/o	8 o/o	6 o/o	8 o/o	9 o/o	7 o/o	3 o/o ½ year	December
500,000	404,000	68,000	1,266	1,079	Mocha Tea Company, Limited	500	500	700	...	...	19 o/o	20 o/o	15 o/o	11 o/o	11 o/o	15 o/o	14 o/o	15 o/o	...	June
500,000	396,500	...	2,321	1,602	Nahaville Estates Company, Limited	500	500	250	...	...	20 o/o	20 o/o	95/96 13 o/o	Nil	Nil	6 o/o	Nil	Nil	...	December
500,000	265,000	34,750	666	495	Neboda Tea Company of Ceylon, Limited	500	500	...	...	...	...	...	2 o/o	Nil	5 o/o	Nil	3 o/o	3 o/o ½ year	December	
1,000,000	410,000	...	493	467	Palmerston Tea Company, Limited	500	500	...	400	...	...	...	8 o/o	4 o/o	5 o/o	5½ o/o	6½	5 o/o	3 o/o ½ year	December
80,000	80,000	...	233	233	Patigama Cinchona Company, Limited	40	40	...	...	...	...	...	...	Nil	Nil	Nil	Nil	Nil	...	December
500,000	150,000	18,500	820	540	Penrhos Estate Co., Ltd., of Ceylon	100	100	...	75	...	...	...	4 o/o	6	98/99 10 o/o	10 o/o	4 o/o	7 o/o	...	June
210,000	50,500	...	...	...	Do do 6 o/o Debts	...	...	...	...	...	...	...	...	6	6 o/o	6 o/o	6 o/o	6 o/o	...	December
500,000	208,740	7,000	416	377	Pine Hill Estate Company, Limited	60	60	...	30	...	...	93/95 9 o/o	95/96 7 o/o	96/97 6 o/o	4½ o/o 97/98	98/99 5 o/o	99,900 5 o/o	900/901 4 o/o	01/02 4½ o/o	June
200,000	310,000	57,500	1,441	1,144	Pitakande Tea Company of Ceylon, Limited	500	500	...	...	...	...	10 o/o	10 o/o	Nil	7 o/o	9 o/o	6 o/o	900/901 Nil	...	June
200,000	200,000	8,000	699	464	Putupaula Estate Company, Limited	100	100	...	...	...	...	...	Nil	Nil	Nil	Nil	Nil	Nil	...	June
200,000	200,000	...	725	544	Ratwatta Cocoa Company, Limited	500	500	...	...	...	...	...	Nil	Nil	Nil	Nil	Nil	Nil	...	June
1,000,000	600,000	9,000	1,496	945	Rayigam Company, Limited	100	100	...	50	...	...	...	3 o/o	2 o/o	5 o/o	4 o/o	2 o/o	...	...	December
500,000	300,000	15,000	1,033	713	Roeberry Tea Company, Limited	100	100	...	85	...	...	...	Nil	3 o/o	3 o/o	5 o/o	5 o/o	5 o/o	...	December
750,000	265,000	...	573	374	Ruanwella Tea Company, Limited	100	100	...	30	...	...	...	5 o/o	Nil	3 o/o	3 o/o	Nil	3 o/o	...	December
50,000	50,000	...	...	...	St. Helier's Tea Company, Limited	500	500	...	...	...	25 o/o	25 o/o	15 o/o	Nil	9 o/o	8 o/o	Nil	Nil	...	June
200,000	20,000	...	2,039	435	Talgaswela Tea Company, Limited	100	100	...	...	...	Nil	7 o/o	3 o/o	Nil	2½ o/o	Nil	2 o/o	Nil	...	December
600,000	30,000	...	...	...	Do do o/o Pref	100	100	...	...	...	7 o/o	7 o/o	7 o/o	7 o/o	7 o/o	7 o/o	7 o/o	7 o/o	...	December
300,000	280,000	49,000	1,880	694	Fonacombe Estate Company, Limited	500	500	...	350	...	5 o/o ½ year	9 o/o ½ year	10 o/o	5 o/o	5 o/o	5 o/o	5 o/o	5 o/o	...	December	
300,000	£3,500	...	...	...	Do do 6 o/o Deb	£100	£100	...	...	...	7 o/o	7 o/o	6 o/o	6 o/o	6 o/o	6 o/o	6 o/o	6 o/o	...	December
500,000	170,000	...	1,140	500	Udabage Company Limited	100	100	...	...	...	...	...	...	...	...	...	...	Nil	...	December
500,000	320,000	10,000	2,697	856	Union Estates Company, Limited	500	500	...	110	...	...	5 o/o	7 o/o	Nil	Nil	Nil	Nil	Nil	...	December
350,000	350,000	65,000	725	663	Upper Maskeliya Estates Company, Limited	500	500	500	550	...	20 o/o	18 o/o	15 o/o	9 o/o	5 o/o	8 o/o	10 o/o	15 o/o	5 o/o ½ year	December	
500,000	240,000	8,000	561	483	Uvakellie Tea Company, Limited	100	100	...	70	...	...	10 o/o	10 o/o	4 o/o	6	7 o/o	8½ o/o	7 o/o	...	December
1,000,000	720,000	17,500	1,549	1,008	Vogan Tea Company, Limited	100	100	47½	55	...	...	...	8 o/o	6 o/o	5 o/o	7 o/o	5 o/o	2½ o/o	...	December
378,000	100,000	20,500	...	...	Do do 7 o/o Deb	500	500	...	...	...	...	...	7 o/o	7 o/o	7 o/o	7 o/o	7 o/o	7 o/o	3½ o/o ½ year	December
190,000	378,000	...	1,134	1,035	Wanarajah Tea Company, Limited	500	500	...	900	...	12 o/o	20 o/o	18	20	13 o/o	17 o/o	17 o/o	17 o/o	01/02 15 o/o	June	
190,000	190,000	47,500	1,269	982	Yatadsria Tea Company, Limited	100	100	285	...	290	25 o/o	25 o/o	25 o/o	20	25 o/o	25 o/o	25 o/o	20 o/o	...	December	

* B. S. T.—Buyers. Sellers. Transactions.

INDIAN TEA COMPANIES REGISTERED IN LONDON, WITH CAPITALS.

DIVIDENDS, &c,—(October, 1902.)

Name of Company.	Paid-up Capital.	Acres in Cultivation.	Amount of Share.	Paid-up per Share.	Reserve.	Financial Year closes.	DIVIDENDS. %		
							1900/1	1901/2	Interim 1902/3
Allynugger	£ 70,000	1,730	10	10	5,500	June 30	nil	nil	...
6 p. c. Preference	50,000	...	10	10	...	...	6	6	...
Amalgamated	382,680	13,494	10	8	15,000	Dec. 31	5	nil	...
5 p. c. Preference	420,000	...	10	10	...	...	5	2½	...
Assam	187,160	11,270	20	20	48,600	Dec. 31	2½	7½	...
Assam Frontier	142,500	6,830	10	10	...	Dec. 31	3	6	...
6 p. c. Preference	142,500	...	10	10	...	...	6	6	3
6 p. c. Debs., £77,500	...	...	100	100	...	...	6	6	3
Attaree Khat	66,745	2,548	5	5	8,790	Dec. 31	5	4	...
Balijan	35,000	842	10	10	4,000	Dec. 31	5	6	...
Bengal United	105,000	5,245	10	10	430	Dec. 31	3	nil	...
5 p. c. Preference	105,000	...	10	10	...	...	5	2½	...
Borelli	78,170	1,909	10	10	...	Dec. 31	5	nil	...
5 p. c. Preference	7,670	...	10	10	...	...	nil	nil	...
Borholla (Assam)	16,000	585	10	10	...	Dec. 31	...	...	...
6 p. c. Preference	16,000	...	10	10	...	...	...	...	...
Brahmapootra	114,500	3,995	5	5	...	Dec. 31	5	8	...
British Assam	20,000	1,319	10	10	...	Dec. 31	nil	nil	...
6 p. c. Preference	15,000	...	10	10	...	...	6	nil	...
British Darjeeling	19,000	1,305	1	1	...	Dec. 31	nil	nil	...
6 p. c. Debs., £25,000	...	...	100	100	...	...	6	...	...
British Indian	60,825	1,652	5	5	...	Dec. 31	nil	nil	...
5 p. c. Preference	16,500	...	5	5	...	...	5	nil	...
Budla Beta	50,000	1,208	10	10	...	Dec. 31	5	...	...
6 p. c. Debs., £15,000	...	...	100	100	...	...	6	...	...
Cachar and Dooars	76,500	4,118	10	10	...	Dec. 31	1	nil	...
6 p. c. Preference	76,500	...	10	10	...	...	6	nil	...
Chargola Tea Association	72,010	4,026	1	1	3,000	Dec. 31	nil	nil	...
7 p. c. Preference	81,000	...	1	1	...	...	7	nil	...
Chubwa	52,500	3,630	5	5	10,000	Dec. 31	3½	nil	...
7 p. c. Preference	52,500	...	5	5	...	...	7	7	...
Consolidated Tea & Lands Co.	420,000	28,717	10	7	65,000	Dec. 31	nil	nil	...
1st Preference, 5 p. c.	1,000,000		10	10	...	...	5	nil	...
2nd " 7 "	400,000		10	10	...	...	7	nil	...
4½ p. c. Debs., £550,000	...		100	100	...	...	4½	4½	2½
Darjeeling	135,420	2,311	20	20	4,150	Dec. 31	2½	2	...
Dejoo Tea Co.	43,580	1,173	10	10	1,344	Dec. 31	5	2½	...
Dooars Tea	150,000	7,970	10	10	56,000	Dec. 31	7½	7½	...
7 p. c. Preference	75,000	...	10	10	...	...	7	7	...
Doloo	60,000	1,424	10	10	...	Dec. 31	7½	7	...
7 p. c. Preference	20,000	...	10	10	...	...	7	7	...

(Continued over.)

INDIAN TEA COMPANIES REGISTERED IN LONDON, WITH CAPITALS,

DIVIDENDS. &c.—(October, 1902.)

Name of Company.	Paid-up Capital,	Acres in Cultiva- tion,	Amount of Share.	Paid-up per Share.	Reserve.	Financial Year, closes.	DIVIDENDS. %		
							1900/1	1901/2	Interim 1902/3
Doom Dooma	£ 200,000	4,384	10	10	49,000	Dec. 31	13	12	...
East India and Ceylon	100,000	4,200	10	10	10,900	Nov. 30	nil	...	...
6 p. c. Preference	100,000	...	10	10	...	...	nil	...	...
Eastern Assam	61,120	1,666	5	5	...	Dec. 31	2½	nil	...
5½ p. c. Debs., £10,000	...	...	100	100	...	...	5½	5½	...
Empire of India and Ceylon	211,000	9,592	10	10	14,500	Dec. 31	nil	nil	...
5 p. c. Preference	219,000	...	10	10	...	Dec. 31	5	nil	...
Imperial Tea Co.	367,960	10,045	10	10	...	Dec. 31	nil	nil	...
5 p. c. Preference	120,000	...	10	10	...	...	5	*2½	...
6 p. c. Debs., £125,000	...	...	100	100	...	...	...	...	...
Jetinga Valley	52,930	2,070	1	1	...	Dec. 31	nil	nil	...
5½ p. c. Preference	55,785	...	5	5	...	...	nil	nil	...
Jhanzie Association	100,000	3,839	5	5	15,000	Dec. 31	4½	nil	...
Jokai (Assam)	250,000	8,980	10	10	60,000	Dec. 31	6	4½	...
6 p. c. Preference	100,000	...	10	10	...	...	6	6	...
Jorehaut	100,000	5,642	20	20	18,267	Dec. 31	10	10	...
Kanan Devan Hills Produce	130,000	10,626	10	2	...	Dec. 31	3½	...	...
6 p. c. Preference	100,000	...	10	10	...	...	6	6	...
Lebong	65,660	1,466	10	8	7,000	Dec. 31	7½	6½	...
Lungla (Sylhet)	100,000	5,440	10	10	...	Dec. 31	nil	nil	...
6 p. c. Preference	100,000	...	10	10	...	...	6	6	...
5 p. c. Debs., £73,000	...	...	100	100	...	...	5	5	2½
Majuli	95,970	3,186	10	10	5,060	Dec. 31	nil	nil	...
6 p. c. Preference	13,500	...	10	10	...	...	6	6	...
Makum Assam	100,000	1,858	1	1	...	June 30	nil	nil	...
5 p. c. Debs., £25,000	...	...	100	100	...	...	5	5	...
Meenglas	43,000	1,000	10	10	2,000	Dec. 31	2½	8	...
Neddem	135,000	9,030	10	10	16,000	Dec. 31	nil	nil	...
5 p. c. Preference	270,000	...	10	10	...	...	5	5	...
Rajmai	56,000	1,683	10	10	20,000	Dec. 31	10	10	...
5 p. c. Debs., £5,000	...	...	100	100	...	...	5	5	...
Scottish Assam	79,590	1,488	10	10	4,000	Dec. 31	nil	nil	...
Sephinjuri Bheel	32,000	1,430	10	10	15,139	Dec. 31	15	15	...
5 p. c. Debs., £5,000	...	...	100	100	...	...	5	...	...
Singlo	105,000	5,567	10	10	...	Dec. 31	nil	nil	...
6½ p. c. Preference	105,000	...	10	10	...	...	nil	nil	...
Travancore Tea Estates	33,000	3,432	1	1	...	Sept. 30	nil	...	...
6 p. c. Preference	37,000	...	1	1	...	...	nil	...	...
5 p. c. Debs., £33,100	...	...	100	100	...	...	5	...	...

* On account.

ACREAGES.

**Acres of Land Under Cultivation with Various Products in the
"Planting Districts" of Ceylon in the Years 1891 & 1901.**

Districts.	Acres.	Acres.	Increase.
	1891.	1901.	
Alagala	1,474	5,102	3,628
Ambegamuwa	5,254	6,728	1,474
Badulla and Passara	7,123	23,251	16,128
Balangoda	1,778	8,353	6,575
Dikoya Upper	23,619	30,010	6,391
Dikoya Lower	6,548	8,826	2,278
Dimbula	37,275	48,399	11,124
Dolosbagie and Yakdessa	16,170	18,907	2,737
Dumbara	37	7,199	7,162
Hantane	4,205	7,601	3,396
Haputale	8,737	20,187	11,450
Haputale West	936	2,393	1,457
Hewaheta Upper	2,864	4,511	1,647
Hewaheta Lower	2,598	5,935	3,337
Hunasgeriya	2,923	3,090	167
Kadugannawa	2,606	4,818	2,212
Kalutara	7,037	20,325	13,288
Kegalle	759	4,265	3,506
Kelani Valley	16,437	36,771	20,334
Kelebokka	3,845	5,367	1,522
Knuckles	3,609	5,390	1,781
Kotmalie	7,324	9,700	2,376
Kurunegala and Galagedera	1,185	11,874	10,689
Kuruwita	563	4,096	3,533
Madulsima and Hewa Eliya	4,548	8,640	4,092
Maskeliya	17,021	18,855	1,834
Matale East and Lagalla	6,369	14,960	8,591
Matale North	983	3,793	2,810
Matale West	2,765	7,374	4,609
Maturata	3,775	6,677	2,902
Medamahanuwera	730	2,788	2,058
Monaragala	181	2,103	1,922
Morawak Korale... ..	2,732	4,363	1,631
New Galway	463	1,138	675
Nilambe	3,913	6,395	2,482
Nitre Cave	366	495	129
Nuwara Eliya	3,003	3,849	846

Acres of Land Under Cultivation with Various Products in the "Planting Districts" of Ceylon in the Years 1891 & 1901.—(Contd.)

Districts,	Acres.		Increase.
	1891.	1901.	
Panwilla and Wattagama .	1,690	3,756	2,066
Punduloya ...	2,891	4,712	1,821
Pussellawa ...	10,088	15,380	5,292
Rakwana & Kukul Korale ...	4,052	4,559	507
Rambodde ...	3,689	4,418	729
Rangalla ...	1,087	5,407	1,320
Udagama ...	3,237	6,790	3,553
Uda Pussellawa ...	5,261	11,223	5,962
Low Country Districts ...	2,839	14,815	11,976
Total Acres ...	249,589	455,588	205,999

CEYLON ACREAGES 1902.

(Ferguson's Ceylon Handbook and Directory for 1902.)

In Private Hands there are:—

	Acres,
Forest and Waste	345,010
Tea	382,343(a)
Cacao	24,136(b)
Cardamoms	8,621
Arabian Coffee	4,304
Liberian Coffee	758
Cinchona	3,471
Rubber	3,356(c)
Palms and other fruit trees on tea and cacao plantations	22,696
Timber Trees do do	7,576
Grass	1,161
Camphor, Annatto, Coco, Kola, Ramie, Vanilla, Pepper, Cloves, Citronella grass, Divi-Divi, Croton, Castor-oil, Aloes, Cinnamon, Tobacco, Cotton	11,201
Total area of 1906 estates	817,933
Total in 1891	687,850
Increase in eleven years	130,083

(a). This is apart from perhaps 3,000 acres still cultivated in native tea gardens of small extent; so that the grand total under tea in Ceylon in June 1902, may be taken at say 386,000 acres.

(b). Apart from 7,000 to 8,000 acres in native gardens.

(c). Chiefly young, and interspersed with other products.

There are 1,589 estates in cultivation with an area of 160,215 acres and employing 1,493 Superintendents and Assistants (apart from Conductors, &c.)

CEYLON TEA ACREAGE.

Year.	Acreage in bearing.	Total Exports in lbs.	Yield per acre.	Year.	Acreage in bearing.	Total Exports in lbs.	Yield per acre.
1889	102,000	31,345,852	336	1898	289,000	122,395,518	423
1890	150,000	45,799,519	365	1899	305,000	129,661,908	425
1891	170,000	67,718,372	398	1900	330,000	149,264,602	452
1892	183,000	72,279,985	394	1901	350,000	146,299,018	417
1893	205,000	82,269,353	401	1902	364,020		
1894	220,000	85,376,322	388	1903	378,000		
1895	250,000	98,581,061	394	1904	384,000		
1896	262,000	110,095,194	420	1905	387,000		
1897	273,000	114,466,318	419	1906			

PROGRESS OF TEA CULTIVATION IN CEYLON.

(Ferguson's Directory.)

Area of Tea Planted Out :—

Year.	Acres.	Year.	Acres.	Year.	Acres.
1867	10	1880	9,274	1891	250,000
1868	200	1881	10,350	1892	262,000
1869	250	1882	22,000	1893	273,000
1872	260	1883	32,000	1894	289,000
1873	280	1884	70,000	1895	305,000
1874	350	1885	102,000	1896	330,000
1875	1,030	1886	150,000	1897	350,000
1876	1,750	1887	170,000	1898	364,000
1877	2,720	1888	183,000	1899	378,000
1878	4,700	1889	205,000	1900	384,000
1879	6,500	1890	220,000	1901	386,000

ACREAGES OF INDIAN TEA DISTRICTS.

AREA UNDER TEA, IN ACRES.

(Mature and Immature Plants.)

	1897.	1898.	1899.	1900.
Bengal	119,190	130,241	132,923	134,572
Assam	310,826	325,823	331,151	337,327
Madras	6,335	6,512	10,164	6,157
N. W. P.	7,965	7,924	7,854	8,055
Punjab	9,970	10,259	10,135	9,745
Native States	14,672	19,701	23,115	25,202
Burma	1,160	1,220	1,390	1,479
	470,119	501,680	516,732	522,487

JAPAN.

ACREAGES UNDER TEA CULTIVATION.

(From the Report of the Vice-Consul of Yokohama.)

Year.	Acres.	Year.	Acres.	Year.	Acres.
1897	123,165	1898	144,582	1899	146,620

TIMBER.

CEYLON WOODS.—(F. L.)

Singhalese Name	Scientific Name.	Weight per cubic foot.	Suitability.
Alubo	... <i>Eugenia Sylvestris</i> ..		Rafters & roofing generally.
Amba (Mangoe)	.. <i>Mangifera Indica</i> ...	41	Brick-blocks. Almirah backs.
Ankenda	. <i>Acronychia laurifolia</i>	48	Affords an excellent charcoal.
Bakmi	.. <i>Sarcocephalus Cordatus</i> ..	38	Rafters and wall plates.
Bala	... <i>Nothopegia Colebrookiana</i> ...		Mine props.
Bata-damba	... <i>Eugenia Operculata</i> ...	44	Weather boards spouting rafters.
Beraliya	.. <i>Doona Macrophylla</i> ...		Rafters and wall plates.
Bokera	.. <i>Gomphia Angustifolia</i> ..		Posts for lines. Resists white-ants.
Bomi	.. <i>Litsea Chinensis</i>		Flooring.
Buhora	. <i>Dipterocarpus Hispidus</i> ..	46	Boat planks. Mine planks.
Bulu	... <i>Terminalia Belerica</i> .	48	Temporary work. Scaffolding
Buruta (Satinwood)	<i>Chloroxylon Swietenia</i> ..	56	Most valuable wood for buildings. A cabinet wood.
Damba	... <i>Eugenia (spp)</i> ...		For any work exposed to water.
Dawata	... <i>Carallia Intigerrima</i>	48	Shingles. Dados and ornamental work.
Del	... <i>Artocarpus nobilis</i> ...	41	Canoes and Boats.
Diya-na	... <i>Mesua Thwaitisii</i> ...		Posts, rafters, mine props.
Diya-para	... <i>Wormia triquetra</i> ..	14	Dados. Ceilings and panels.
Domba	... <i>Calophyllum. Inophyllum</i> ...	45	Cart poles.
Dorona	... <i>Dipterocarpus Glaudulosus</i> ...	45	... ..
Dun	... <i>Doona (spp)</i> ...	68	Shingles. Rafters. Beams Sleepers.
Gal-mora	.. ('see mora) ...		... ..
Gammalu	... <i>Pterocarpus Marsupium</i> ...	56	House building. Furniture. panels, &c
Gan-mi	. <i>Bassia nerifolia</i> ..	47	Cart frames. Superior fuel.
Gadumba	... <i>Trema orientalis</i> ...	30	For charcoal.
Godapara	.. <i>Dillenia retusa</i> ..	45-50	Rafters.
Goroka	<i>Garcinia Cambogia</i> ...	50-51	... ..
Gurukina	.. <i>Calophyllum Burmanni</i> ...	62	Rafters and Ridge poles.
Hal-mendora	... <i>Stemonoporus Wightii</i> ..		Wall plates. Roofing.
Halmilla	.. <i>Berrya Ammonilla</i> ..	56-61	Gun carriages. Oil casks. A fine wood.
Hampalanda	. <i>Terminalia parviflora</i>		Flooring boards.

CEYLON WOODS.—(Contd.)

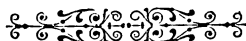
Singhalese Name.	Scientific Name.	Weight per cubic foot.	Suitability.
Hapu	.. <i>Cananga odorata</i> ...	34	Ceiling boards.
Hadawaka	... <i>Chaetocarpus castano-</i> <i>carpus</i> ...	56	Posts. Beams. Wall plates.
Hingul	.. <i>Amoora Rohituka</i> ...	40	Shingles. Beams. Rafters.
Homederia	... <i>Diospyros Thwait-</i> <i>tissi (!)</i> .		Ornamental wood.
Hondapara	.. <i>Dillenia indica</i> ...	15	Beams and sleepers.
Hora	... <i>Dipterocarpus Zeyla-</i> <i>nicus</i> ...	52	Boat planks. Beams. Plum-
Hulan-hik	... <i>Chickrassia tabularis</i>	45	Posts. Panels. Window
Hunu-kirilla	<i>Glochidion Zeylani-</i> <i>cum</i>		Temporary work.
Kadol	... <i>Rhizophora mucro-</i> <i>nata</i> ...	66	Ceilings. Affords tannin.
Kahata	... <i>Careya arborea</i> ..	59	Bridge planks, Yields tannin.
Kalumederia	.. <i>Diospyros quaesita</i> ...	54	The most valuable cabinet
Kaluwara (Ebony).	<i>Diospyros ebenum</i> ...	76	Ornamental work.
Karawu	... <i>Phyllanthus indicus</i>		Roofing.
Kina (Hill sp :)	.. <i>Calophyllum Walkerii</i>	16	House building generally.
Kirikon	... <i>Walsura Piscidia</i> ...		Roofing or Beams.
Kitul	... <i>Caryota urens</i> ...	79	Spouting. Rafters. Laths.
Kokatiya	.. <i>Garcinia terpnophylla</i>	78	Beams. Posts. Piles.
Kon	.. <i>Schleichera trijuga</i> ...	60	Beams. Cabinet work.
Kos (Jackwood)	.. <i>Artocarpus integri-</i> <i>folia</i> ...	12	Ceylon's best building tim-
Kohomba	... <i>Azadirachta indica</i> ..	50	ber, Panels. Cabinet work. Hand-
Kumbuk	... <i>Terminalia glabra</i> ...	62	some. Sleepers. Beams. Bridge
Lawulu	.. <i>Chrysophyllum Rox-</i> <i>burghi</i> ..	40	planks. Mining timber.
Liyan	... <i>Homalium Zeylani-</i> <i>cum</i> ...	18	General building work.
Luna-madalla	... <i>Stereospermum Che-</i> <i>lonioides</i> ...	50	Flooring boards.
Madatiya	... <i>Adenanthera pav-</i> <i>nina</i> ...	41	Ceilings. Flooring & Cabinet
Madol	... <i>Garcinia echinocarpa</i>	56	work. Shingles.
Mara	... <i>Albizia Stipulata</i> ...	12	Cabinet work.
Milla	... <i>Vitex altissima</i> ...	52-60	All forms of building work.
Mendora	... <i>Vatica Roxburghiana</i>	50-60	Pile- or water resisting work
Mi	... <i>Bassia longifolia</i> ...	62	Beams. Rafters. Roofing &
			bridge work.

CEYLON WOODS.—(Contd.)

Singhalese Name,	Scientific Name.	Weight per cubic foot.	Suitability.
Molpedda	.. Isonandra lanceolata		Mines and Beams,
Mora	... Nephelium Longana	60	Rafters. Mine props.
Muna-mal	... Minusops Elengi ...	50-60	Beams and heavy work.
Muruta	... Lagerstroemia Flos-reginae ...	45	Beams, roofing, &c.
Na (iron-wood)	.. Mesua ferrea	77	Beams and any heavy work.
Na-mendora	... Sunaptia scarbriuscula	..	Beams. Bridge planks.
Na-imbul	... Pomertia eximia	45	Ceilings. Door frames and rafters.
Nedun	... Pericopsis Mooniana	70	Valuable cabinet & furniture wood.
Neralu	... Elaeodendron Glau-cum	45	Cabinet work.
Palu	... Mimusops hexandra...	68-80	All very heavy work. Beams, &c.
Panukera	... Eugenia Neesiana	..	Rafters. Wall plates.
Pat-kela	... Bridelia Moonii	45	Beams, Wall plates. Posts.
Pehimbia	... Filicium decipiens	65	Agricultural implements. Beams.
Pelan	... Kurrimia Zeylanica...	..	Rafters and roof work.
Pol (Cocoanut)	... Cocos nucifera	72	Laths. Ornamental work.
Sapu	... Michelia 'hampaca...	40	Doors. Frames. Dados flooring.
Suriya	... Thespesia populnea...	50	Carriage building. Gun stocks.
Suriya-mara	... Albizzia odoratissima	56	Furniture & Cabinet work.
Towenna	... Palaquium pitiolare	53	Beams. Joists. Mine work.
Telambu	... Sterculia foetida	36	Temporary work only.
Tolol	.. Trichadenia Zeylanica	..	Temporary work. Mining planks.
Ubberia	... Carallia Calycina	56	Beams and Buildings. Ornamental work.
Wal-buruta	... (see Wan Sapu)	..	.. ..
Walukina	... Calophyllum bracteatum	..	.. ..
		32	Ceilings. Cart poles. Window frames.
Wanami	... Bassia fulva	46-51	Beams. Trusses. and Joists.
Wana Sapu	.. Michelia nilagerica	40	Doors. Frames. Ceiling. Handsome,
	
Weli-damba	... (see Damba)	..	.. ..
Welipianna	... Anisophyllea Zeylanica	..	.. ..
		45	Shingles.
Weralu	... Elaeocarpus serratus	..	Pit props or temporary work.
Wira	... Hemicyclia sepiparia	..	Posts. An excellent fuel.
Yaakhalu	... Doona trapesifolia	60	Shingles. Beams. Flooring and roofing.

CEYLON TEA BOX WOODS,—(F, L.)

Sinhalese Name.	Scientific Name.	Weight per cubic foot.	Remarks.
Anduwenna	... <i>Ilex Wightiana</i> ...		Pale in colour. Fair.
Arrida	... <i>Camptosperma Zeylanica</i> ..	34	Very good. Works well and clean.
Badulla	... <i>Semecarpus Gardneri</i> ..	7 30	A bad wood. Poisonous.
Dawul-kurundu	... (see Kudu-dowla) ..		... ..
Diyatalia	.. <i>Mastixia tetrandra</i> ...	46	Heavy, liable to warp.
Etamba	... <i>Mangifera Zeylanica</i> ...	32	Very good but requires careful seasoning.
Gona	... (see Wal-gonna) ..		... ..
Iriya	... <i>Myristica Iriya</i> ..	40	Good but rather heavy.
Katuboda	... <i>Cullenia excelsa</i> ..	32	Good. Liable to split.
Katuimbul	.. <i>Bombax Malabaricum</i> ..	24	Very clean. Pale white.
Kekuna	... <i>Canarium Zeylanicum</i> ..	27	Highly scented if not seasoned
Kokun	... <i>Kokoona Zeylanica</i> ...		Liable to split.
Kududowla	.. <i>Litsea Zeylanica</i> ..	45	Excellent but too heavy.
Lunumadilla	... <i>Melia dubia</i> ..	26	Very superior. Handsome.
Maha-badulla	.. <i>Semecarpus Subpeltata</i> ...		A bad and poisonous wood.
Malaboda	... <i>Myristica Laurifolia</i> ..	24	Excellent if carefully seasoned.
Muguna	... <i>Tetrameles nudiflora</i> ..	28	Very good fairly even in weight.
Ruk	.. <i>Myristica Horsfieldia</i> ..	15	Liable to split.
Rukettana	.. <i>Alstonia Scholaris</i> ...	25	Inferior often foetid.
Tel-kekuna	.. <i>Aleuritis triloba</i> ..		Pale. Foul smelling.
Tinniya	... <i>Doona congestiflora</i> ...	36	Makes a very neat package.
Ulalu	.. <i>Machilus macrantha</i> ..	35	Handsome package.
Urukanu	... <i>Lasianthera apicalis</i> ..	34	Fairly good.
Wal-bilin	... <i>Ailantus malabarica</i> ..	21	A good package if well seasoned.
Wal-gonna	... <i>Ficus callosa</i> ...	1	Good. Rather heavy.



TREES TO PLANT,

AT LOW ELEVATIONS.

NATIVE TREES :—

Halmilla	...	..	Berrya Ammonilla
Wa	...	...	Cassia siamea
Madatiya	...	...	Adenantha pavonina
Kabalmara	...	...	Albizzia stipulata
Suriyamara	...	...	Albizzia odoratissima
Lunumidilla	.	...	Melia dubia
Bomi	...	...	Litsea sebifera
Gedumba	...	...	Trema orientalis
Dawul Kurundu	...	...	Letsea zeylanica
Et-amba	...	...	Mangifera zeylanica
Pehimbiya	...	...	Filicium decipiens
Dawata	...	..	Carallia integerrima
Hal	...	...	Vateria acuminata

FOREIGN TREES :—

Jack	...	..	Artocarpus integrifolia
Sapu	...	..	Michelia Champaca
.....	...	...	Casuarina equisetifolia
.....	...	...	Grevillea robusta
Balsam of Peru	...	...	Toluifera Percira
Rain Tree	...	..	Pithecolobium Saman
Madras Thorn	...	...	Pithecolobium dulce
Toon	...	...	Cedrela Toona
.....	...	...	Pterocarpus indicus
Paper Mulberry	...	...	Broussonetia papyrifera

AT HIGH ELEVATIONS.

Red Toon—cedrela surata
 Cryptomeria japonica
 Eucalyptus—various species
 Acacia Melanoxyton
 Casuarina
 Grevillea
 Wattles—Acacia dealbata and A. decurrens.

TIMBER MEASUREMENT,

It is required to know the cubical capacity of a log that measures 50 feet in length, and of which the girth at the base is 8 feet, in the middle is 6 feet, and at the end is 4 feet.

Rule :—Reduce all the girths to inches, and add together, and divide the result by the number of times the girth is taken. Divide this result by 4, and square the product.

Multiply the product (squared) by the length of the log in feet and divide by 144 (= the square of one foot in inches) and the remainder will be the cubical capacity required.

Example :—1st : Girth 8 feet = 96 inches

2nd: do 6 .. = 72 do

3rd: do 4 .. = 48 do

—————
 3)216 = 72 which divided by 4 = 18 or
 what is called the "Side." $18 \times 18 \times 50$ [length of log
 in feet] = $112\frac{1}{2}$ cubic feet. or by fractions :—
 $50 \times 18 \times 18 = 50 \times \frac{3}{2} \times \frac{3}{2} = 112\frac{1}{2}$ the result required.

It is required to know the cubical capacity of 500 Boat planks, each 30 ft. long by 12 inches wide, by 2 inches thick.

Rule :—Multiply the number of planks by the length of each. Multiply result by width and again by thickness and reduce to cubic feet.

Example :— $500 \times 30 = 15,000 \times 1$ (12 inches) $\times \frac{1}{3}$ (2 inches) equals $\frac{15,000}{6}$
 or 2,500 cubic feet.

Or by another method :—

Multiply thickness in inches of each plank by number of planks, This would reduce the 500 to a pile of wood 30 feet long by one foot wide by $83\frac{1}{3}$ feet high.

Then $30 \times 1 \times 83\frac{1}{3} = 2,500$ or the answer required.

CEYLON SAWYER'S MEASUREMENT.

When the thickness of timber is $1\frac{1}{2}$ inches or less, multiply length by width. When over $1\frac{1}{2}$ inches thick, add width and thickness together and multiply by length.

NOTES,

BUILDINGS.

BUILDING NOTES.

Whenever the building is over 5 feet high and scaffolding is required about 1 % should be added in estimating cost. In the case of plastering this should not be added until there is a 7 feet lift.

8 Bushels Lime are required for 1,000 bricks.

Cost of bricklaying Rs. 13.00 per 1,000 without bricks.

Brickwork in Cement per cube of 100 feet Rs. 50.00.

Mortar—1 of Lime to 2 or 3 of sharp river sand.

COST OF TEA FACTORIES.

Messrs. Brown & Co., Ltd., of Hatton, estimated for Tea Factory with two upper stories :—

Ground floor 60 ft. × 44 ft. (14 ft. verandah).

1st .. 60 ft. × 30 ft.

2nd „ 60 ft. × 30 ft.

Corrugated iron roofing, timber trusses, outside pillars brick, inside columns and girders of H. section iron, ground floor cement concrete, 1st and 2nd floors, 1 inch pine flooring on timber joists, timber framing with weather boarding for sides and ends, teak windows and doors.

Iron Work	.....	.....	Rs. 1,924
Masonry	.....	.....	„ 2,783
Carpentry	.....	.....	„ 4,860

Rs. 9,567

or Rs. 3.62 per sq. ft. ground floor.

or „ 1.53 „ „ „ three floors.

Iron Tea Factory with two upper floors :—

Ground floor 138 ft. × 48 ft. (12 feet verandah).

1st „ 138 ft. × 36 ft.

2nd „ 138 ft. × 36 ft.

Corrugated iron roofing, iron trusses and purlins. all columns and girders of H section iron, timber framing and weather boarding for sides and ends. Dwarf stone wall 2 ft. 8 inches high, cement concrete on ground floor, 1st and 2nd floors, 1 inch pine flooring on timber joists, Teak window and doors.

Iron Work	.....	.....	Rs. 8,635
Masonry	....	.....	„ 4,125
Carpentry	.....	.....	„ 11,055
Erection	.....	.....	„ 600

Rs. 24,415

or Rs. 3.69 per sq. ft. ground floor.

or „ 1.47 „ „ „ three floors.

COST OF TEA FACTORIES.—(Contd.)

All iron Tea Factory 60 feet × 40 feet no verandah, 3 floors Cor. Iron roofing. Iron Trusses and purlins all columns and girders of H section Iron. Corrugated Iron on timber framing for sides and ends, Teak windows and doors. Dwarf stone wall 3 feet high Cement concrete on ground floor and 1 inch pine flooring tongued and grooved, on timber joists on 1st and 2nd floor

.....	.....	Cost Rs, 9,182·00
	or „	3·82 per sq. ft. ground floor.
	or ..	1·27 per sq. ft. three floors.

EXAMPLES LOW COUNTRY.

	Acres Tea.	Factory and Fittings.	Machinery.	Total.
One Estate . . .	522	Rs. 28,000	Rs. 35,000	Rs. 63,000
Do	391	„ 21,700	„ 28,500	„ 50,200
Total	915	Rs. 49,700	Rs. 63,500	Rs. 113,200
Average cost per acre		„ 51·43	„ 69 55	„ 123·98

Without Fittings.—II, K. R.

EXAMPLE.—*Mariawatte Factory, Gampola*, Outer walls brick. Verandah pillars brick. Structure of iron, Roof corrugated iron. Cement ground floor. Upper floor white pine, tongued and grooved.

Area ground floor	× Rs. 1·75	} Cost.
Do both floors	× Rs. 0·85	

EXAMPLE.—*Tillyrie Factory, Bogawantalawa*. Outer pillars stone. No verandahs. Weather boarding sides, Cement ground floor. Iron centre pillars and cross girders. Corrugated iron roof.

Area ground floor	× Rs. 2·00	} Cost.
Do both floors	× Rs. 1·00	

EXAMPLE.—*Scrubs Factory, Nuwara Eliya*. Outer pillars brick. No verandahs. Wattle and daub and weather boarding. Cement ground floor. Iron cross girders. No centre pillars. Corrugated iron roof.

Area ground floor	× Rs. 2·60	} Cost.
Do 3 floors	× Rs. 0·90	

IRON WORK FOR FACTORY BUILDINGS.

APPROXIMATE PRICES DELIVERED IN COLOMBO.

Ridged Roof	Cost per lineal foot		Weight per foot packed	
		Rs.		Cwt.
36 feet span	25	....	2
40 do do	27	.....	2½
42 do do	27·50	.....	2½
45 do do	33	.....	2¾

Rolled Iron girders

for columns & joists

		Rs.		lbs.
6 in. × 3 in	.....	0·98	.....	12
7 in. × 3½ in.	.....	1·17	.....	16
8 in. × 4 in.	.....	1·40	.....	20

Iron roof complete including Sheets, Trusses, Purlins, Clips, ready for erection but exclusive of gutters is from 55 to 60 cents per square foot.

CORRUGATED IRON.

Size of Sheets.		R. W. G.		No. Sheets to a ton.
6 ft. × 26 in.	.....	24	.....	132
7 ft. × 26 in.	.....	24	.....	113
8 ft. × 26 in.	.....	24	.....	100
6 ft. × 32 in.	.....	24	.....	110

CORRUGATED IRON.

7 ft. × 32 in.	.....	24	.....	95
8 ft. × 32 in.	.....	24	.....	81
6 ft. × 26 in.	.....	26	.....	180
7 ft. × 26 in.	.....	26	.....	160

Add 1 % for overlapping.

Price Colombo Rs. 220 per ton.

Price Up-country Rs. 245 per ton.

Clips :—Colombo 6 to 10 cents each according to size.

Up-country 33 cents per lb.

392 clips 3 in. × 1 in.	}	= One Cwt.
336 do 4 in. × 1½ in.		
252 do 6 in. × 1½ in.		

Continuous Iron roofing in kegs of 100 feet × 28 W. G

× 1½ feet	..	Rs. 25
× 2 do	.....	.. 33
× 2½ do	.....	.. 42
× 3 do	.....	.. 50

Ridging 18 in. wide 25 cents per foot.

CORAL LIME, CEYLON.—H. K. R.

In Shell	.....	1 heaped bushel weighs	.....	82 lbs.
		1 cut do	.....	73 lbs.
Quick Lime	.. ..	1 heaped do	.....	72 lbs.
		1 cut do	.... .	64 lbs.
Slaked Lime	....	1 heaped do	.... .	112 lbs.
		1 cut do	.....	100 lbs.

1 bushel quick lime gives 2'60 bushels slaked lime.

A heaped bushel is one-fifth greater than a cut bushel.

"About ninety cubic feet of firewood are required to burn 35 cubic feet of lime." (Ballardie).

COST OF WORK.

MASONRY—DRY RUBBLE.

Quantities		Rate		Per cube of 100 feet.
100 cubic feet stone	.....	Rs. 0'10	.....	Rs. 10'00
3 Masons	.....	" 1'00	.....	" 3'00
6 Coolies	.....	.. 0'36	.....	" 2'16
Contingencies	.....	.. 5 %	....	" 0'75
				<u>Rs. 15'91</u>

MASONRY—RUBBLE IN MORTAR.

Quantities.		Rate.		Per cube of 100 feet.
81 cubic feet Stone at	.....	Rs. 0'10	.....	Rs. 8'40
20 do Lime at	....	.. 0'50	.. ...	" 10'00
40 do Sand at	.....	.. 0'03	.....	" 1'20
4 Masons at	.....	.. 1'00	.....	" 4'00
8 Coolies at	.....	.. 0'36	.....	" 2'88
Contingencies at	..	.. 5 %	.....	" 1'69
				<u>Rs. 28'17</u>

TOOL DRESSED MASONRY.

Prepared stone per cube	.....	.....	.....	22'00
Lime 10 bushels at	.....	Rs. 0'87	.....	Rs. 8'70
Sand 15 do at	....	.. 0'03	.....	" 0'45
Ma-on 6 days at	.....	.. 1'00	.....	" 6'00
Cooly 6 do at	.....	.. 0'36	.....	" 2'16
				<u>Rs. 39'31</u>

COST OF WORK.—(Contd.)

BRICKWORK IN LIME.

1,400 Bricks	at	Rs. 15'00 per 1'000.....	Rs. 21'00
16 cubic feet Lime	at	„ 0'50	„ 8'00
30 do Sand	at	„ 0'03	„ 0'90
5 Masons	at	„ 1'00	„ 5'00
10 Coolies	at	„ 0'36	„ 3'60
Contingencies	at	„ 5 %	„ 1'92
			Rs. 40'42

FLOORS.

			Per sq. of 100 feet.
Lime concrete floor 4 in. thick, 2 of sand, 1 of lime.			Rs.
4 of broken stone	.....	.....	at 8'00
Ditto 6 inches thick.			Rs.
6 Bushels lime	.....	at 0'87	5'22
8 do sand	.....	at 0'03	0'24
32 do metal (to pass through a 1½ in. ring)	at 0'10		3'20
½ Day Mason	.....	at 1'00	0'50
2 Coolies	.....	at 0'36	0'72
			Rs. 9'88
Cement plastering over ditto ½ in. thick of pure cement	.....		20'00
3 cement 2 sand	.....	.....	16'00
1 do 1 do	.....	.....	11'75
1 do 2 do	.....	.....	8'50

It is not recommended to lay pure cement. Sand should be mixed to let in the air. If pure cement is laid it should be mixed with water to the consistency of a paste and then rubbed in with a broom. This is technically called "grouting," and must not be done except over cement concrete.

In damp situations 6 inches of rough paving below the concrete is recommended.

Cement concrete floor, 4 inches thick		per square
1 cement, 2 sand, 6 broken stone		of 100 feet.
(Without cement plaster on top) .....	.....	Rs. 18'50
Ditto 6 inches thick .....	.....	„ 29'00
Brick floor laid on flat at 400 bricks to a square .....	.....	„ 12'00
Ditto „ „ on edge at 500 „ „ „ .....	.....	„ 17'00
Floor of clay or sand powdered .....	.....	„ 2'00
Soorkie concrete floor 100 of metal, 13 line, 13 well burnt brick dust		
13 sharp sand. Mix dry and then water. It should be well stamped.		
Asphalate flooring say inclusive per square .....	.....	Rs. 30 00

CEMENT CONCRETE.

QUANTITY OF CEMENT PER CUBIC YARD.

Proportions.	Weight of Cement.				Casks.
1 in 10½	2 Cwts.	...	0·60
1 in 8	2½ "	...	0·70
1 in 7	3 ,	...	0·90
1 in 6	3½ "	...	1·05

One cubic yard (1½ inch broken stone) and one cubic yard sand, when mixed = 1¾ cubic yards concrete.

The adding of cement does not increase the bulk.

CEMENT,—(Molesworth.)

Portland Cement is composed of clayey mud and chalk ground together and afterwards calcined at a high temperature ; after calcining it is ground to a fine powder.

Cement.—1 of sand to 1 of cement ; use without sand if great tenacity is required.

Portland Cement improves by age if kept from moisture.

The longer it is in setting the stronger it will be.

The cleaner and sharper the sand the greater the strength.

Strong cement is heavy ; blue grey, slow setting.

Quick setting cement has generally too much clay in its composition— is brownish and weak.

The less water used in mixing cement the better.

Bricks, used with cement should be well soaked.

Cement setting under *still* water will be stronger than if kept dry.

Salt water is as good as fresh for mixing cement.

CEMENT PLASTERING,

CEMENT REQUIRED TO COVER 100 SQUARE FEET.

	1 inch thick.		¾ inch thick.		½ inch thick.	
	Bush.	Casks.	Bush.	Casks.	Bush.	Casks.
Pure Cement	9¾	2½	7½	2	5	1¼
1 Cement & 1 Sand	5	1¼	3¾	1	2½	5
1 Do 2 do	3½	1	2½	5	1½	5

CEMENT PLASTERING,—(Contd.)

1 cask cement will point 400 square feet of brick-work.

1 cask weighing	...	...	gross lbs. 400
Do	...	=	tare lbs. 22 $\frac{3}{4}$
Do	...	=	net lbs. 337 $\frac{1}{4}$
1 cask contains	...	...	cubic feet 3 $\frac{3}{4}$
Do loose cement	...	...	do = 4 $\frac{1}{4}$
Do cement	...	...	bushels = 3 $\frac{1}{2}$
1 bushel weighs	...	...	lbs. 112
1 cubic feet	...	...	lbs. 89

PLASTERING.

Plastering in lime 1 coat	...	...	Rs. 4.00 per square.
Do „ 2 coats	...	...	„ 5.50 „
Do „ best polished	...	...	„ 6.50 „

For best polishing put 3 lbs. white lead to 1 $\frac{1}{6}$ bushel boiled lime. This is sufficient for a square.

WOODEN FLOORS,

Flooring including everything but cost of timber	...	...	per square. Rs. 10.00
Do tongued and grooved	...	...	„ 15.00

PINE WOOD FLOORING BOARDS. (In running lengths.)

6 inches wide \times 1 $\frac{1}{8}$ inches thick	..	..	„ 14.00
6 inches wide \times 1 inch thick	..	..	„ 12.00

Approximate weight per sq. 2 cwt and 1 $\frac{1}{2}$ cwt. respectively.

PINE WOOD CEILING BOARDS. (In running lengths.)

6 $\frac{1}{2}$ inches wide \times $\frac{1}{2}$ inch thick	„ 7.00
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Approximate weight per sq. 100 lbs.

These prices are net ex Go-downs Colombo.

SUNDRY WORKS.

Ceiling Cloth, fixed	...	...	per square of 100 feet. Rs. 7.50
Roofing, tiled lean-to (tiles Rs. 15 per 1,000)	...	...	„ 15.00
Do trussed	...	...	„ 17.50
Do jungle shingled lean-to	...	...	„ 12.00
Do do trussed (shingles Rs. 10 per 1,000)...	...	...	„ 15.00
Do teak shingled lean-to	...	...	„ 33.00
Do do trussed	...	...	„ 36.00

(Continued on page 203.)

		per square of 100 feet.
Roofing, corrugated iron lean-to	...	Rs. 24'00
Do do trussed	...	,, 26'00
Weather Boarding, feather edged	...	,, 6'00
Trellis work	...	,, 7'00
Factory Windows, including glass, putty, &c.	..	,, 10'00
White washing do	...	,, 0'30
Painting, 1 coat (including materials)	...	,, 2'00
Do 2 coats	...	,, 3'50
If timber has to be bought, at say Rs. 2'50 per cubic foot,		
Roofing will cost :—per square.		

Corrugated iron lean-to roof	...	Rs. 90'00
Do 15 feet span	...	,, 94'00
Do 20 ,, trussed	..	,, 100'00
Do 30 ,, do	...	,, 113'00
Do 40 ,, do	...	,, 130'00
Shingle lean-to roof	...	,, 48'00
Do 15 feet span	...	,, 53'00
Do 20 ,, do	...	,, 66'00
Do 30 .. do	...	,, 80'00
Do 40 .. do	...	,, 88'00

TEAKWOOD RATES.

	cents.
1 in. Window sashes with glass and putty per sq. feet	. 45
1 1/4 in. ,, ,, ,, ,, ,,	... 50
1 1/4 in. ,, ,, without ,, ,, ,,	... 33
1 1/2 in. ,, ,, with ,, ,, ,,	... 60
1 1/2 in. ,, ,, without ,, ,, ,,	.. 43
1 1/4 in. Doors 1/2 glass & 1/2 panel with glass & putty	.. 80
1 1/4 in. ,, ,, without ,, ,,	.. 65
1 1/4 in. ,, Panel	... 75
1 1/2 in. ,, ,,	... 85
1 1/2 in. ,, 1/2 glass & panel with glass & putty	... 90
1 1/2 in. ,, 1/2 ,, ,, without ,, ,,	... 75
1 in. Solid Panel	... 65
1 in. part glass & part panel with glass & putty	. 65
1 in. ,, ,, without ,, ,,	... 50

Teakwood Window and Door Frames.

4 in. × 3 in.	... per foot run	... 45
4 in. × 1 in.	...	... 55
5 in. × 4 in.	...	... 65

TILING.

		Weight of fifty.		No. to cover a square.
13 inches long	...	lbs. 120	...	520
14 do	..	„ 150	...	468
15 do	...	„ 194	..	424
16 do	...	„ 237	...	380

CALICUT TILES.

Ordinary flat, Cost in Colombo per 1,000	...	Rs. 60.00
Ridge tiles do 100	...	„ 14.50
Ventilators do each	...	„ 1.50

Each tile 15 in. long—150 to a square—one ventilator to a square.
Approximate number to 1 cwt.:—Flat 20, Ridge 15, and Ventilators 6.

COLOMBO BRICK AND TILE COY.

Machine Pressed Bricks.—Of English Standard size 9 in. × 4½ in. × 3 in. with joints, per 1,000 ... Rs. 30.00
(Delivered where required within the Municipal Gravets of Colombo).

“ Mangalore ” Tiles, per 1,000	...	Rs. 55.00
Half Tiles, per 1,000	...	„ 30.00
Ridge Tiles, per 100	...	„ 17.50

(Ex Colombo Depot.)

SHINGLES.

Ordinary.—18 in. × 3 in.; 800 to square; Cost:—Rs. 4.50 to 6.50 for splitting and dressing.
Woods.—Doon, Dawata, Keena, Madool.
Teak Sawn Shingles.—15 in. × 5 in.; cost Rs. 30.00 per 1,000; 480 to square; about 2,800 to a ton.
A double-bullock cart will carry 3,000.
Angle for shingle roofs 45°.

NAILS.

Nails required per 100 square feet for following works :—

Class of Work.	1 in.	2 in.	2½ in.	3 in.	Shingle Nails.	Spike Nails.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Trellis Work	...	$\frac{1}{2}$	...	$\frac{1}{4}$	—	...
Louvre Boarding	...	1	...	$\frac{1}{2}$	...	...
Ceiling Cloth	... $\frac{1}{2}$ tintacks	..	$\frac{1}{2}$	...	...	...
Weather Boarding	.. $\frac{1}{3}$	...	..	$\frac{1}{4}$	...	...
Tiled lean-to Roof	...	1½	...	...	...	2
„ trussed	...	1½	...	..	...	2½
Iron Roofing	..	$\frac{1}{6}$	..	..	..	2½
Shingle Roofing	..	1½	...	...	4	2½
Teak Shingle Roofing	...	1½	...	...	2½	2½
Boarded Flooring	...	...	2	...	...	1½

CEYLON RAILWAY RAILS.

	Length.	Weight per rail.	Weight per yard.
Main Line	21 feet.	616 lbs.	88
Seaside Line	21 „	576 „	72
Kelani Valley Line	21 „	370 „	46½
Uda Pussellawa.....	21 „	374 „	46½

Main Line, depth of rail $1\frac{7}{8}$ in. width of flange $5\frac{1}{2}$ in.

K. V. & U. P. „ $3\frac{9}{16}$ in. „ $3\frac{5}{8}$ „

Old rails Rs. 16.88 each or Rs. 75.00 a ton d/d Colombo.

WEIGHT OF MATERIALS,

	...	per cubic foot...	lbs.	
Ebony	...	per cubic foot...	71	71
Ironwood	...	" "	71	71
Jackwood	...	" "	42	42
Pine, white	...	" "	27 to 34	27 to 34
Satinwood	...	" "	60	60
Teak	...	" "	46 to 54	46 to 54
Iron	...	" "	480	480
Basalt	...	" "	172 to 184	172 to 184
Chalk	...	" "	145 to 162	145 to 162
Granite	...	" "	163 to 167	163 to 167
Asphalte	...	" "	156	156
Bricks	...	" "	100 to 125	100 to 125
Cement	...	" "	100 to 110	100 to 110
Clay	..	" "	119	119
Cabook	...	" "	108	108
Concrete, ordinary	...	" "	119	119
Do. cement	...	" "	137	137
Earth	...	" "	77 to 125	77 to 125
Mortar (average)	...	" "	106	106
Sand, quartz	...	" "	171	171
Do. river	...	" "	117	117
Water	...	" "	62	62
Oil	...	" "	58	58
Plumbago	...	" "	140	140
Air	...	" "	.08072	.08072
Steam	...	" "	.055	.055



USEFUL RECEIPTS.

(HURST.)

For leaks in zinc or galvanised iron roofs.—White lead, some white sand, and dry pipe-clay. equal parts of each, made into a paste with boiled linseed oil.

To enable Portland cement to stand heat in furnace work.—Mix with common salt in the proportion of 5 of salt to 6 of cement, and use as ordinary mortar.

To remove iron screws when rusted.—Scrape the rust off the head and drop some parafin oil over it. After soaking into the wood, the screws may be easily drawn in the usual manner, or take a red hot poker and heat the screw by placing the point on the head,

To cure dry rot in a building.—Kill the fungus by washing the wood with a strong solution of crude Carbolic Acid, and the unaffected parts and walls adjoining with a saturated solution of sulphate of iron. The causes of damp should be removed and the space ventilated.

SOLDERING,

For Sealing Iron in Stone:—2 lead, 1 zinc.

Do Top of Canned Goods— $1\frac{1}{4}$ lb. lead, 2 lb. tin, 2 oz. bismuth—lead melted first, tin added next, finally the bismuth stirred in well just before pouring. This makes a soft solder and the cans do not take much heat to open them.

Soft Solder:—1 lead, 2 tin.

For Tinned Iron:—7 lead, 1 tin.

VARNISH FOR WOODS,

(SINHALESE RECIPE.)

2 lbs. resin	|	$\frac{1}{2}$ bottle turpentine
$1\frac{1}{2}$ bottles linseed oil	|	a little arrack

Before applying varnish, apply coat of linseed oil.

LINSEED OIL.

Application for 5 squares,		
1 gallon Boiled linseed oil	...	Rs. 3·10
2 days carpenter	...	,, 2·00
1 day cooly	...	,, 0·36
		Rs. 5·46

or Rs. 1·09 a square.

DUBBING,

2 lbs. black resin
1 lb. tallow
1 gallon train oil,

CEMENT FOR DRIERS.

3 of chalk	}	mix with water.
1 of salt		

RUST JOINT CEMENT.

Quick setting.	Slow setting.	
1	2	Sal-ammoniac powder by weight.
2	1	Flower of Sulphur.
80	200	Iron borings made into a paste.

ROOFING FELT.

Should be perfectly dry before being coated, which should be done immediately after the felt has been laid.

Boiled coal tar mixed with well slaked lime, in the proportion of 2 gallons of the former to 5 or 6 lbs. of the latter (the lime being sifted in and well stirred after the tar has been boiled) should be applied hot with a common stiff brush or tar mop. Before the coating cools, clean dry sharp sand may be sifted over it, or 3 buckets ordinary coal tar to 1 bucket pure wood ashes. Constantly stir over a fire just under boiling point, dip a stick into it, and if after wafting in the air 2 or 3 times it can be touched without soiling the fingers, then apply hot. When fit to walk over without sticking, apply coating of good substantial lime wash. Roofs for felt covering should have little slope, if steep, felt will drag and tear.

PAINTING.

OXIDE OF IRON PAINT.

11 ounces paint }
 6 „ linseed oil } to cover a square.

PAINTING.—(Molesworth.)

1 gallon of mixture, or 6 pints raw linseed oil, 1 pint boiled oil, 1 pint turpentine, requires 12 to 14 lbs, dry paint.

A gallon will cover :—

On wood from 450 to 630 square feet.
 On well-painted iron 720 „
 A gallon *Tar* .. 1st coat 108 „
 Do ... 2nd .. 144 „

TO REMOVE OIL PAINT.

Take 2 lbs, washing soda to $\frac{1}{2}$ bushel of quicklime mixed until it attains the consistency of thick cream, spread on the paint and keep moist for one hour. The paint can then be washed off.

TO REMOVE OLD PUTTY.

Paint the dry putty with nitric or hydrochloric acid, and after about an hour it will have become soft enough to be easily removed; or apply a hot iron, by which it will become soft enough to remove immediately.

STONE GREY WASH FOR WALLS.

(Native Recipe.)

Lampblack weight 15 ct. pieces Dhoby's blue „ 10 „ „ Yellow ochre „ 10 „ „	}	Lime weight 8 lbs. Glue „ 1 „ Rice congie „ 1 measure.
--	---	--

ASBESTOS PAINT.

To cover 100 square yards, coats	...	1	2	3	4
Requires	lb...	91	134	172	208

FLOOR STAIN.

Dissolve one and a half ounces of permanganate of potash in one gallon of boiling water, apply with a flat brush working with the grain of the wood. When quite dry apply linseed oil 2 or 3 times with a flannel and then polish with bees wax and turpentine made into a paste.

NATIVE DISTEMPER.

1½ bus. boiled lime
 ¼ lb. glue
 ¼ lb. colouring matter

This is sufficient for a square which a mason and a cooly should apply in 2 days.

WHITE ANT DESTROYER.

Colombo Apothecaries Co., a 20 oz. bottle (Rs. 1'50) when diluted as directed will cover 15 to 20 squares and a 2 gallon jar (Rs. 10) 180 to 200 squares. It has been known to preserve timber from white ants for two years at least,

LIGNUM PAINT.

Lignum Paint supplies a want that has long been felt for a suitable coating for the outside wood work of Tea Factories &c. Oil Paint is too expensive, and of too inflammable a nature to recommend itself, and Tar, in addition to being actually dangerous, renders the appearance of a building very dingy and unsightly.

Lignum Paint is far cheaper than either of these, resists the attacks of White Ants, is a good fire-proof paint, and for appearance is all that can be desired, being of a pleasing dark red shade, which harmonises well with the green of the landscape.

The price of Lignum Paint is Rs. 11'25 per keg in Colombo, and as this quantity is sufficient to cover 6,000 square feet of timber work, it will be seen that the cost of its application is comparatively trifling.

DIRECTIONS FOR MIXING.

The ingredients should be mixed in the following proportions :—Dissolve 5 lbs. Green Crystals in 8 to 10 gallons of boiling water, add and mix 5 lbs. of good flour, (to avoid lumps the flour should be first mixed well with a little cold water and then poured in) boil for ¼ hour, then add 20 lbs. Red Powder, a little at a time, and boil again for ¼ hour, the mixture being well stirred during the whole process. The paint is now ready to be applied and can be put on with an ordinary paint brush; the paint dries in at once, and a second coat should be given as soon as the first is dry. During the painting the mixture should be kept warm, and often stirred up.

Where White Ants are prevalent it is advisable to soak the ends of the timber, and especially the bottom of all uprights which are to rest on the ground, for a minute or two, so that the paint may be absorbed into the pores of the wood.

If the woodwork is situated close to a fire, or to smoke chimneys it is advisable to apply four or five coats, by which the risk of fire will be greatly minimised.

(MESSRS. BROWN & Co.)

ELECTRIC LIGHT.

THE ELECTRIC LIGHT FOR TEA FACTORIES.—

J. W. Howard.

A separate motor for the dynamo is by no means necessary provided accumulators be used.

These accumulators offer the very great advantage of storing the power whilst the tea machinery is doing its ordinary routine work, and of supplying the lamps during the night time without any further machinery being in motion, as they store electricity until such time as the lamps may be needed, when the mere turning of a switch lights up the whole or part of the factory as may be required.

Tea rolling machinery not running evenly as a rule would cause the dynamo to give a flickering light; but should it be convenient in any particular case to run the engine without driving a roller during the night time, the lights may be run direct from a specially constructed and similar priced dynamo, thereby saving the very heavy outlay which accumulators entail, as will be seen by the table of approximate cost of apparatus given below.

The power required to drive a dynamo is one H. P. for every nine 16 candle power incandescent lamps.

The lower the speed of the dynamo the more expensive, but the more durable.

Each 16 candle power lamp requires 1·2 ampères at a pressure of 50 volts.

Maintenance cost is consumption of fuel plus cost of lamps at 1s, 9d, each allowing the average life of a lamp to be 1,000 burning hours before renewal is necessary.

The following tables give the approximate cost of various sized apparatus suitable for Tea Factories. Prices are in sterling, and to which say 15 % should be added to cover packing, freight, and insurance; the locality of estate will govern the island charges.

COST OF ELECTRIC LIGHT PLANT.

	No. of Lamps. 10 of 16 c.-p. or 20 of 8 c.-p.		No. of Lamps. 17 of 16 c.-p. or 34 of 8 c.-p.		No. of Lamps. 25 of 16 c.-p. or 50 of 8 c.-p.		No. of Lamps. 30 of 16 c.-p. or 60 of 8 c.-p.	
	£	s.	£	s.	£	s.	£	s.
Dynamo slow speed, 800 revolutions ...	25	6	29	5	33	5	40	0
Dynamo high speed, 1,800 revolutions	16	0	21	5	26	10	29	5
Accumulators ..	46	10	67	15	93	10	113	5
Switch Board ...	2	14	3	0	3	6	4	0
Ammeter ...	4	0	4	0	4	0	4	0
Cable, per 100 yards ...	3	6	4	13	6	10	6	10
Small Wire ...	0	16	0	16	0	16	0	16

ELECTRIC LIGHT,—(Contd.)

SUNDRY FITTINGS.

		£.	s.	d.
Incandescent Lamps, 16 or 8 c. p.	... . each	0	1	9
Small Slate Switches, metal covers	... ..	0	1	10
Small China	... ..	0	2	3
5 Light Slate	... ..	0	2	0
5 " China	... ..	0	2	9
8 " Slate	... ..	0	3	4
10 " China	... ..	0	4	0
Lamp-Holders and Shades combined, wood	... ..	0	2	0
" " " " all China	... ..	0	2	9
Main Fuses, 10 to 30 lights	... ..	0	2	0
Small " "	... .. each 8d to	0	1	2
Voltmeter	... .. each	4	16	0

CARRYING CAPACITY OF CABLES AND WIRES.

CABLES.		Ampères.	No. of 16 c.p. lamps 50 volts.	Cost per 100 yards.
				£ s.
7 Strands of No. 20 B. W. G. will carry	... ..	6	5	2 2
7 " " 18 " " "	... ..	13	10	3 6
7 " " 16 " " "	... ..	24	20	4 11
7 " " 14 " " "	... ..	37	31	6 16
19 " " 16 " " "	... ..	63	52	11 10
WIRES.				
No. 14 B. W. G. wire will carry	... ..	5	4	1 7
" 16 " " "	... ..	3	2	1 2
" 18 " " "	... ..	1'5	1	0 16

ACCUMULATORS.

The correct way to use accumulators is to have the dynamo running as long as possible when the lights are being used, and when it is necessary to stop the dynamo then use the accumulators for the rest of the time.

They must not be regarded as infallible storage ; they are also expensive, and meant primarily to regulate and steady the light.

Each cell of accumulators (thick plates) will give a pressure of two volts. The cells are filled with sulphuric acid and water showing a specific gravity of 1,170.

ELECTRIC LIGHT.—(Contd.)

When charged from the dynamo, and the cells are in good condition, the specific gravity will rise to 1,220 or 1,230 and drop again as the pressure is taken out of them by the lamps.

When being charged the liquid in the cells should give off gas freely and equally. They cannot be overcharged, and should never be allowed to run down entirely, and should be charged until *all* the cells give off gas freely and equally.

When not in use they should be charged once in every 14 days. They should not be kept at a lower gravity than 1,200, a small hydrometer being supplied with the accumulators to take the gravity of each cell occasionally.

The charge necessary is calculated as follows:—Each 16 c.-p. lamp requires 1·2 ampères, therefore 10 lamps require $1\cdot2 \times 10$, or 12 ampères. Example:—Lamps required each day number 10 for 3 hour or 5 for 6 hours, the result being the same. These would require $10 \times 1\cdot2$, or 12 ampères per hour, which would give a total of 12×3 , or 36 ampères per day. The charge required, if dynamo gives say 12 ampères, would be $\frac{36}{12}=3$ hours, plus an extra 25 per cent. Say another hour, or a total of 4 hours charge.

The dynamo should be allowed to get up its full speed before switching the current into the cells, otherwise the current from the cells will pass through the dynamo and drive it as a motor.

The first charge is a long one, and should take about 24 hours.

The measuring instrument, or Ammeter, shows the force of the current passing from the dynamo into the cells, which should not exceed 13 to 15 ampères; a second instrument—the Voltmeter—shows the pressure of the cells when the lamps are in use and should not show more than the correct voltage of the lamps, or they are liable to injury by blackening &c. The pressure is regulated by switching in and out of cells by means of a regulating switch.

When using the lamps, at the time of charging, 2 to 3 cells should be switched out of the lamp circuit, as when a cell is being charged its pressure rises from 2 to 2·2 volts., and when the charging is stopped it falls again to 2 volts.

The prices for accumulators as given are for those which will work their respective number of lights for 6 to 8 hours at one charge.

Detailed instructions are supplied with accumulators.

THE DYNAMO.

The brushes should never be allowed to spark. Should they do so, the lever should be loosened and pushed slowly round the commutator until the sparking ceases.

ELECTRIC LIGHT,—(Contd.)

Should the corners of the brushes get turned up, sparking will ensue, and all that is necessary is to trim the corners off from time to time.

The brushes should be kept bearing firmly but not hard on the commutator by means of the spring attached.

The brushes will wear down, and require pushing down by loosening a set screw.

Should the commutator wear, raise the brushes and clean it with fine sand paper.

All connections and lugs should be felt from time to time, as should they work loose they will heat very considerably.

In case of doubt as to which is the negative or positive pole of the dynamo, take two pieces of sheet lead, say 1 in. \times 1 in. \times $\frac{1}{8}$ in. thick, attach a piece of wire to each and put the leads into a vessel containing sulphuric acid and water, being careful they do not touch one another; connect the wires to the dynamo, and let the latter revolve—the positive pole of the dynamo will be that to which is attached the piece of lead that turns brown, the piece attached to the negative pole remaining white.

APPROXIMATE COST OF INSTALLATION ON AN ESTATE.

(Walker, Sons & Co., Kandy).

Factory and Bungalow about sixty 16 C. P. incandescent lamps complete plant, including Dynamo, Battery of Accumulators, Switchboard, factory and handsome bungalow fittings, including erection approximate price in England £220·0·0 at 1/1 exchange	...	Rs. 3,300·0·0
Erection &c., say	... ..	,, 1,000·0·0
(Approximate freight and landing charges about 30 % on the home cost)		Rs. 1,300·0·0
Installation for small factory with bungalow say		
30·16 C. P. incandescent lamps without accumulators.		
Approximate home price £95·0·0. at 1/1 exchange	...	Rs. 1,425·0·0
Erection &c., say	... ..	,, 750·0·0
(Approximate freight and landing charges about 30 % on the home cost)		Rs. 2,175·0·0

NOTE.—The above figures are necessarily only approximate, as the price depends a great deal upon what kind of fittings are used, and also the amount of wiring necessary in factory and bungalow. If the installation is properly erected, the cost of up-keep should be very small, apart from power used for driving the Dynamo.

THE KITSON LIGHT.

The Kitson Light claims that for Brilliancy, Purity of Light, Simplicity of Installation and Economy, it far excels every other system.

The Installation consists of three essential parts :—

1. The Reservoir, which contains the oil,
2. The Lamp, which consumes the oil.
3. The Tubing, which conducts the oil.

In it and by its own heat, the oil is first vaporized and converted into an oil-gas, which is then burned in sun-like incandescence by means of a refractory mantle.

The oil, reaching the lamp cold, through the tubing, is conveyed to a vaporizing tube, which in diameter is the size of a lead pencil, and 8 inches long, and is there gasified by the heat from the mantles—the arrangement being such that only a minute quantity of oil contained in the vaporizing tube is subjected to the heat at one time. An indication of the smallness of the consumption is here afforded by the minuteness of the outlet at the opposite end of the vaporizing tube, it being no longer than a needle-point. From thence the oil vapour passes into an open mixing-tube on the top of the reflector, where sufficient air is drawn in for supporting combustion. The mixture then travels down to the mantles, inside which it burns.

The lamp is lighted by a very simple and ingenious contrivance, which rapidly heats the vaporizing tube previous to the turning on of the oil.

The construction of the Reservoir is an exceedingly strong, though light, cylindrical vessel, constructed of cold drawn steel, with oil-and-air capacity varying from 5 to 40 gallons which is equal to 1,000 candle power for 30 to 150 hours respectively.

There is a sight gauge which indicates the depth of the oil in the tank

A pressure gauge,

A safety valve, and

A simple oil pump—attached to a filling Bucket,

By the pump the tank is first charged with oil; then air is pumped in up to 50 lbs. gauge pressure, which air lasts for all time. All that is then needed to keep up the pressure, is to replenish the supply of oil when it is becoming exhausted.

The whole process is rapid and easy, and no handling of oil, so objectionable with ordinary oil lamps, is required.

The oil is conducted from the Reservoir to the lamp by strong copper or bronze tubing, no thicker than electric incandescent wires, and as easily manipulated and hidden from view. The tubing may ramify to any number of lamps, but it is not advisably carried beyond 1,000 feet; it would then cost less to instal another reservoir,

The lamp (1,000 C. P.) consumes about half a pint of oil per hour.

The Kitson light has been successfully tried as a factory illuminant,

(AGENTS :—MESSRS. BROWN & DAVIDSON, TALAWAKELLE.)

FIRE INSURANCE,

THE CEYLON FIRE INSURANCE ASSOCIATION,
REGULATIONS OF THE FIRE OFFICES' COMMITTEE
(FOREIGN).

- (a) RIOT OR CIVIL COMMOTION AND WAR RISKS.—“That it be not permissible to cover loss or damage by fire occasioned by or happening through any Invasion, Foreign Enemy, Rebellion, Insurrection, Riot, Civil Commotion, Military or Usurped Power, or Martial Law, either on payment of an extra premium or otherwise.”
- (b) LOSS OF PROFIT INSURANCES.—“That the question of the insertion in Policies of a provision covering the additional cost of manufacturing, say, six months' Crop of Tea in the event of the destruction of, or damage to, the Tea Factory by fire is one with which it must be left to the discretion of individual Companies to deal.”
- (c) ALLOWANCES FOR FIRE EXTINGUISHING APPLIANCES.—“That it is inexpedient to make allowances for Fire Extinguishing Appliances in Tea Factories in Ceylon.”
- (d) ELECTRIC LIGHT AND ELECTRIC MOTORS.—“That no reduction can be made in the current Tariff rates for Factories and other Buildings in which Electricity only is used for artificial lighting purposes, or for Factories in which Electric Motors are substituted for the Steam and
 or
 Oil Engines now in use.”

Conditions applying to all the following Tariffs and “Risks Specially Rated,” each item of every Insurance is to be subject to the First or Pro Rata Condition of Average only.

Warranty to be Inserted in all Policies.

Warranted that no Stacks of Hay or Straw be allowed within 100 feet of any building insured hereby except when stated to the contrary.

Short Period Rates.

For any term not exceeding	10 days ...	One-eighth of Annual rate
Exceeding 10 days but not exceeding	15 „ ...	One-sixth „
„ 15 „ „	1 month	One-quarter „
„ 1 month „	2 „ ...	Three-eighths „
„ 2 „ „	3 „ ...	One-half „
„ 3 „ „	4 „ ...	Five-eighths „
„ 4 „ „	6 „ ...	Three-quarters „
„ 6 „ „	...	Annual rates.

Provided that in no instance shall any policy be issued under this Tariff at less than $\frac{1}{6}$ th per cent.

Long Term Insurances.

Insurances for any longer term than a year must be charged not less than the equivalent of the Tariff rate applicable to the Risk, multiplied by the number of years for which the Insurance is to be in force.

Increase of Amount Insured.

In the event of an increase of the amount insured under a Policy, the premium on the additional amount may be calculated at the annual rate when an agreement or understanding is come to with the insured that the Policy shall be renewed, at the date of expiry, for a period of not less than one year for the full sum,

Adjoining Buildings.

Two or more buildings adjoining each other are to be charged the highest rate applicable to either, unless the same be divided by a party wall of Brick $\frac{\text{and}}{\text{or}}$ Cabook $\frac{\text{and}}{\text{or}}$ Stone, not less than 18 inches in thickness, and carried at least one foot above the roof, in which case each section may be rated as a separate Risk.

Floating Policies.

Floating Policies covering not more than three specified Risks may be issued at a rate 25 per cent. higher than the highest rate applicable to any one of them ; if covering more than three specified Risks, at a rate 50 per cent. higher than the highest rate applicable to any one of them.

Policies covering in one sum the contents of more than one godown which are contiguous or adjacent and in the sole occupation of the Insured are exempt from the above additional charge.

No Floating Policy can be issued extending to Risks situate beyond the limits of the Municipalities of (1) Colombo, (2) Kandy. or (3) Galle.

Steam Carpentry.

Any Building in which sawing of timber, or other carpenter's work by steam power is carried on, is to be rated specially, but at not less than 1 per cent.



**Minimum Rates of Premium for the Buildings and Contents
of Tea Factories, Packing Rooms, and Stores.**

	1 In which no withering or firing is carried on and without Engine or Stove.	2 In which withering alone is carried on.	3 In which firing alone is carried on.	4 In which both withering and firing are carried on.	5 Isolated building containing Steam and/or Oil Engine, Boiler and/or Stove.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
A. —Buildings constructed throughout of iron, stone, or brick, with iron or tiled roofs (wooden flooring, rafters, and supports allowed) ...	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$
B. —Buildings constructed of brick, stone, or iron pillars with weather boarding and/or wattle and daub, and iron or tile roofs ...	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$1\frac{0}{8}$
C. —Buildings constructed of brick, stone, or iron pillars with weather boarding and/or wattle and daub, and shingle roofs, also wooden and wattle and daub buildings with iron or tile roofs ...	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$
D. —Wooden and/or wattle and daub buildings with shingle roofs ...	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	$1\frac{1}{2}$

In classes B. & C. above, when the external pillars are not carried up to the roof, an extra $\frac{1}{8}$ per cent. must be charged.

The above rates under columns 3 and 4 are based on steam $\frac{\text{and}}{\text{or}}$ oil power being used, but, if water power only is in use, the rates will be $\frac{1}{8}$ per cent.

Minimum Rates of Premium for the Buildings and Contents of Tea Factories, Packing Rooms, and Stores.—(Contd.)

less. It must, however, be clearly understood that the whole $\frac{1}{8}$ per cent. shall be charged for steam $\frac{\text{and}}{\text{or}}$ oil power in all Factories in which such power is available.

In cases where wire weaving is employed for withering purposes, $\frac{1}{8}$ per cent. is to be deducted from the rates in columns 2 and 4.

Should charcoal fires be used in withering houses, an additional $\frac{1}{8}$ per cent. must be charged.

It should be specially noted that a specific value must be placed on Withering Tats as distinct from either "Building" or "Fixtures."

Where the furnace of a tea dryer is situated outside of the Factory and separated from it by a solid wall of stone or brick through which only the hot air for drying the tea is introduced, no extra rate for firing is to be charged.

In no case, however, shall the aggregate deductions allowed as above exceed $\frac{1}{2}$ per cent.; and, further, no Risks under the respective Classes shall be accepted at less than the rates appearing in column 1

No extra rates is chargeable for chulas $\frac{\text{and}}{\text{or}}$ charcoal fires in a Tea Factory where the firing rate is already paid, if these are on the ground floor only of the Factory.

Minimum Rates for Cooly Lines.

(1)	Brick or Stone Walls, with Iron or Tile Roof	..	$\frac{5}{8}$ per cent.
(2)	Wattle and Daub Walls, (Brick or Stone Pillars) with Iron or Tile Roof	... ..	$\frac{3}{4}$ "
(3)	Wattle and Daub Walls (Wooden Pillars) with Iron or Tile Roof	... ..	$\frac{7}{8}$ "
(4)	Weather Boarding Walls, with Iron or Tile Roof	...	1 "
(5)	Brick or Stone Walls, with Shingle Roof	...	$1\frac{1}{4}$ "
(6)	Wattle and Daub Walls (Brick or Stone Pillars) with Shingle Roof	... ..	$1\frac{1}{2}$ "
(7)	Wattle and Daub Walls (Wooden Pillars), with Shingle Roof	... ..	$1\frac{1}{2}$ "
(8)	Weather Boarding Walls, with Shingle Roof	...	$1\frac{1}{2}$ "

Minimum Rates of Premium for the Buildings and Contents of Cardamom and Cocoa Factories.

	Per cent.
A.—Buildings constructed throughout of iron, stone, or brick, with iron or tiled roofs (wooden flooring, rafters, and supports allowed)	$\frac{3}{8}$
B.—Buildings constructed of brick, stone, or iron pillars with weather boarding and/or wattle and daub, and iron or tile roofs	$\frac{1}{2}$
C.—Buildings constructed of brick, stone, or iron pillars with weather boarding and/or wattle and daub, and shingle roofs, also wooden and wattle and daub buildings with iron or tile roofs	$\frac{5}{8}$
D.—Wooden and/or wattle and daub buildings with shingle roofs	1

Steam ^{and}/_{or} oil power, chulas (charcoal and sulphur fires) and apparatus for hot air drying may be used; but no deduction is allowable if these are not used.

In classes B. & C. above, when the external pillars are not carried up to the roof $\frac{1}{8}$ per cent. extra must be charged.

General Tariff.

	Per cent.
L.—Bungalows outside the Municipal Limits of Colombo and/or Kandy and/or Galle :—	
1. Brick and/or Cabook and/or Stone Walls with Tiled and/or Iron Roof	$\frac{1}{4}$
2. Brick and/or Cabook and/or Stone Walls with Shingle Roof	$\frac{3}{8}$
3. Wattle and Daub Walls with Tiled and/or Iron Roof	$\frac{1}{2}$
4. Wattle and Daub Walls with Shingle Roof	
5. Walls of Weather Boards with Tiled and/or Iron Roof	$\frac{5}{8}$
6. Walls of Weather Boards and/or Weather Boards and Wattle and Daub with Shingle Roof	
7. Walls of Mud and Weather Boarding with Shingle Roof	1
8. Any bungalow with Thatch on Roof either by itself or over Iron	

PROPOSAL FORM.

N.B.—Buildings standing apart from one another, or not communicating internally, must have a separate sum insured upon each, and if Stock or Effects are lodged in two or more distinct buildings, the sum to be insured thereon, in each building, must be specified the buildings, being in every instance described.

If a building is divided into several sections by perfect wall of solid brick or stone carried through, and rising at least one foot above the roof, each section may be rated as a separate risk.

QUESTIONS.

1. Give the full name and designation of the Person in whose favour the Insurance is to be effected.
2. Describe the construction of the Building, viz :—
 - (a) Are the external walls of iron, brick, stone, cabook, timber, or wattle and daub?
 - (b) Do the party-walls on each side go through the roof? ..
 - (c) Is the roof flat or pitched, is it of brick or mortar, or covered with slate, tile, zinc, lead, painted paper, tarred rope, thatch, galvanized iron, shingle, or other material?
 - (d) State if there are one or more floors, of what material they are made, how supported and how approached?
3. Give the situation of the building, and state what natural facilities, such as a river or deep wells, there are always available for extinguishing fires; how near to a cart road, &c.
4. Are withering and firing carried on in the same or in isolated buildings?
5. State whether it is occupied as a dwelling-house, office, tavern, godown, store, factory, shop, or otherwise.
6. If hazardous goods are contained therein, describe them. In particular state the kinds and quantities of mineral oils, gunpowder, lucifer matches, jute, cotton, kapock, or coir goods, and whether in bales or loose, kept.
7. (a) Give particulars of any appliances for producing heat, whether cooking ranges, stoves, Choolas, Siroccos, or Dessicators; and how they are situated, and if protected.
 - (b) If steam engines are used state if the chimneys are properly protected from all wood work or other inflammable material. ...
 - (c) State what appliances are used for manufacturing purposes, and how situated.

PROPOSAL FORM,—(Contd.)

8. How are the adjoining buildings and those in the immediate neighbourhood built and covered? If detached, give the distance of the nearest building.
9. What trades are carried on in the adjoining buildings? ...
 Are any of them used for the storage of hazardous goods? ...
 Are any buildings within a radius of 30 yards roofed with cadjan or thatch? If so, describe the same particularly, especially if used by carpenters or joiners.
10. Is there any ignitable grass within 40 yards of the building proposed for Insurance?
11. Is there any Insurance on the property to be insured in another office? If so, state the name of the office and the sum insured.
12. Have you ever had any property destroyed by Fire? If so, give particulars,



ROADS AND MEASURES.

LONG MEASURE.

Inches.

12	equals	1 foot.
36	„	3 equals 1 yard.
72	„	6 „ 2 equals 1 fathom.
193	„	16·5 „ 5·5 „ 2·75 equals 1 perch.
7920	„	660 „ 220 „ 110 „ 40 equals 1 furlong.
63360	„	5280 „ 1760 „ 880 „ 320 „ 8 equals 1 mile.

Land Measure.

Inches.

7·92	equals	1 link.
792	„	100 equals 1 chain.
63360	„	8000 „ 80 equals 1 mile.

Square Measure.

Inches.

144	equals	1 foot,
1296	„	9 equals 1 yard.
39204	„	272·25 „ 30·25 equals 1 perch.
1568160	„	10890 „ 1210 „ 40 equals 1 rood.
6272640	„	43560 „ 4840 „ 160 „ 4 equals 1 acre.

Land Measure (Square.)

Links.

625	equals	1 perch.
10000	„	1 chain.
25000	„	2·5 equals 1 rood.
100000	„	10 „ 4 equals 1 acre.

Solid Measure.

Cubic inches.

1728	equals	1 cubic foot.
46656	„	27 equals 1 cubic yard.

LAND MEASURE.Kegalle District.

For Mud Lands.

1 Seruwa	=	2½ Perches
1 Peck	=	20 Perches
1 Bushel	=	½ Acre
1 Parrah	=	1 Rood and 10 Perches
1 Laha or Kuruni	=	10 Perches
1 Pela	=	2 Roods and 20 Perches
1 Amunam	=	2½ Acres
10 Kurunis	=	1 Pela
4 Pelas	=	1 Amunam

LAND MEASURES,—(Contd.)

For High Lands.

1 Amunam	= 4 Pelas, 40 Lahas, 8 Parrahs, 5 Bushels, 20 Pecks or 160 Seers.
1 Pela	= 10 Lahas, 2 Parrahs, 1½ Bushels, 5 Pecks, or 40 Seers.
1 Laha	= 4 qr. = 12 awali = 24 handfuls.
1 Parrah	= 5 Lahas, or 20 Quarts.
1 Amunam	= Approximately 5½ acres English measure.

Kandyan District

8 Lahas	= 1 Kuruni.
80 "	= 10 " = 1 Pela.
320 "	= 40 " = 1 " = 1 Amunam.

Dry Measure.

1 Amunam = 4 Pelas ...	1 Pela = 1½ Bushel
= 40 Lahas or Kurunis	= 6 Pecks
= 8 Parrahs ...	= 48 Quarts or Seers
= 6 Bushels ...	1 Laha = 4½ Seers or Quarts
= 24 Pecks ...	1 Parrah = ¾ Bushel
= 192 Quarts or Seers...	= 3 Pecks
1 Pela = 10 Lahas or Kurunis	= 24 Quarts or Seers
= 2 Parrahs ...	= 5 Lahas

NOTE:—A Laha and a Kuruni are considered to be one and the same, as are a quart and a seer; and the bushel measure is held to contain 32 quarts or seers. Such reckoning is customary in the Western Province.

Land Measure.

1 Bushel's sowing extent = 2 roods	1 Amunam's sowing extent = 3 acres
= 80 perches	1 Pela's " " = 3 roods
1 Peck's " " = 20 perches	1 Laha's or Kuruni's " " = 12 pchs.
1 Quart's or Seer's " = 2½ perches	1 Parrah's " " = 1 rd. 20 perches

The quart, seer, laha, kuruni and bushel are estimated as bearing the same relation to one another as in dry measure.

TO MEASURE METAL.

All metal or gravel should be piled in the form adopted by the P. W. D., and the contents calculated as follows. Add top length of pile (T) to twice the length of the base (L) and divide the result by 3. Multiply this quantity by half the height (H) multiplied by the breadth (B).

$$= \left(\frac{B \times H}{2} \right) \times \frac{2L + T}{3}$$

TO MEASURE METAL,—(Contd.)

Dimensions for a Cube of Metal.

Length of base	...	...	...	17 ft. 10 ins.
Breadth of base	...	...	...	5 „
Height of pile	...	...	...	2 „ 6 ins.
Length of top	...	...	...	12 „ 10 „

Cost of Road Metal.

Quarrying and Sledging	...	Rs. 0'84 per cube of 100 feet		
Blacksmith and boy	...	„ 0'24	„	„
Breaking	...	„ 3'75	„	„
Transport and piling	...	„ 2'00	„	„
Contingencies—Overseer, &c.	...	„ 0'17	„	„
		Rs. 7'00	„	„

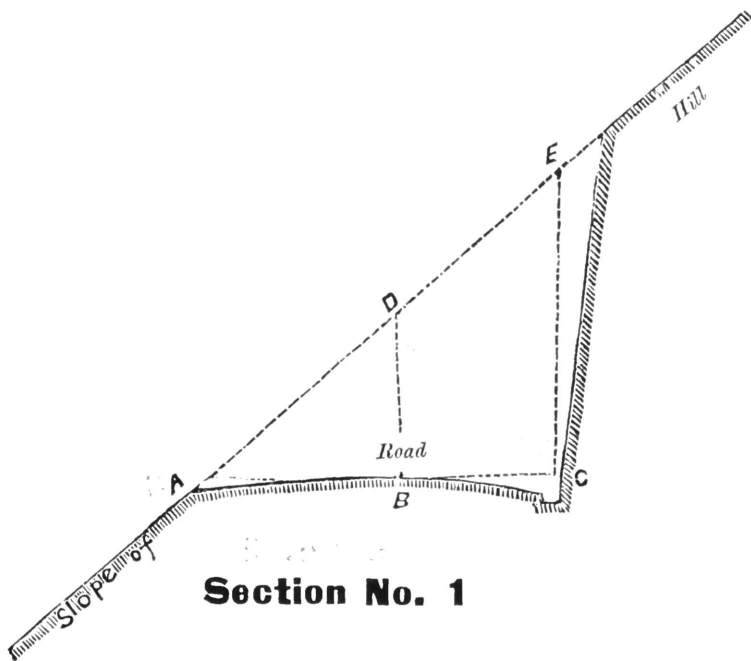
COST OF CONSTRUCTION OF A FIRST CLASS
CART ROAD,

Width 12 feet.

52'80 lines }
5,280 feet } = one mile.

			Per mile.
Foundation @ Rs. 23/00 a line of 100 feet	...	...	Rs. 1,214'40
Metal (including carts watering &c.) @ Rs. 34/50 a line of 100 feet	...	...	„ 1,821'60
Cutting side drains 2' × 1½' 3 cubes @ Rs. 4/00	...	...	„ 211'20
Contingencies (Superintendence) @ 10%	...	...	„ 32'46
			Rs. 3,278'66
Up-keep.—Clearing side drains	per mile	...	Rs. 20'00
Surface drainage	„	...	„ 15'00
Clearing jungle on both sides	„	...	„ 10'00
Metal rolling &c., in proportion to requirements (see rate above).			

HOW TO MEASURE EARTH WORK.

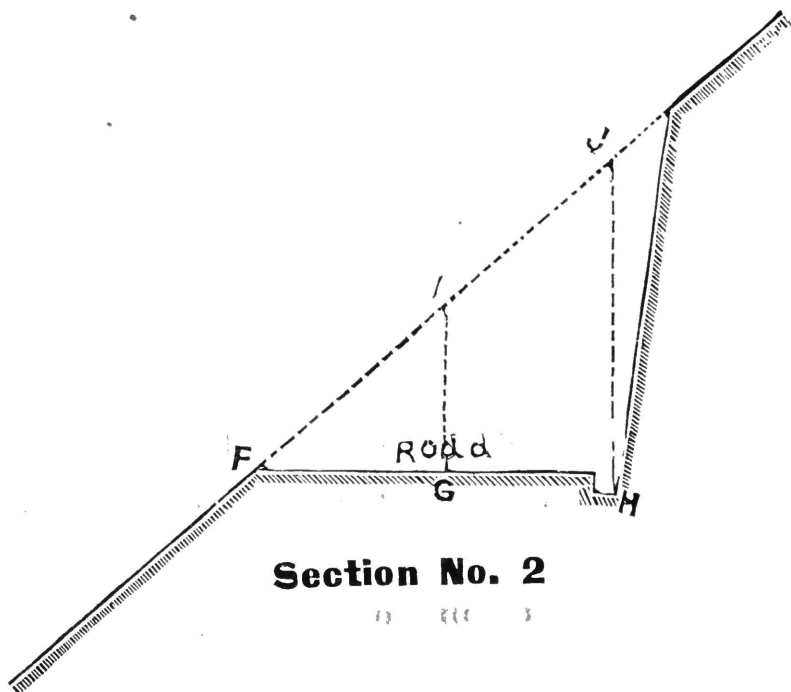


A	equals	0	ft.
BD	"	5	"
CE	"	10	"

Equals 15 ft. divide by 3 equals 5 ft. :—Average height of cutting
in section 1



HOW TO MEASURE EARTH WORK.—(Contd.)



F equals 0 ft.

GI „ 10 „

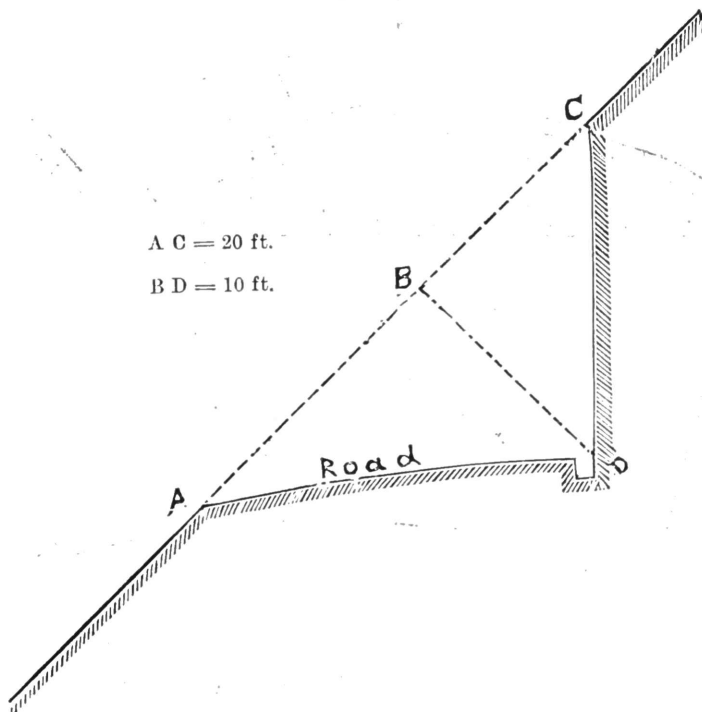
IIJ „ 20 „

Equals 30 ft. divided by 3 equals 10 average, and so on for each section; add the averages together (= in this case 15) divide by the number of sections ($15 \div 2 = 7\frac{1}{2}$) and then multiply result as under.

Average of sections \times width of road \times length of section equals total cubic feet.

HOW TO MEASURE EARTH WORK.—(Contd.)

ANOTHER WAY BY TRIANGLES.



Multiply base (A C) $\times \frac{1}{2}$ the perpendicular height ($\frac{1}{2}$ B D) = area of section *i.e.* $20 \times \frac{30}{2} = 100$ ft.

Add all the sections together, divide by the number of them to get the average and multiply by the total length in feet. Result total cubic feet of earth work.

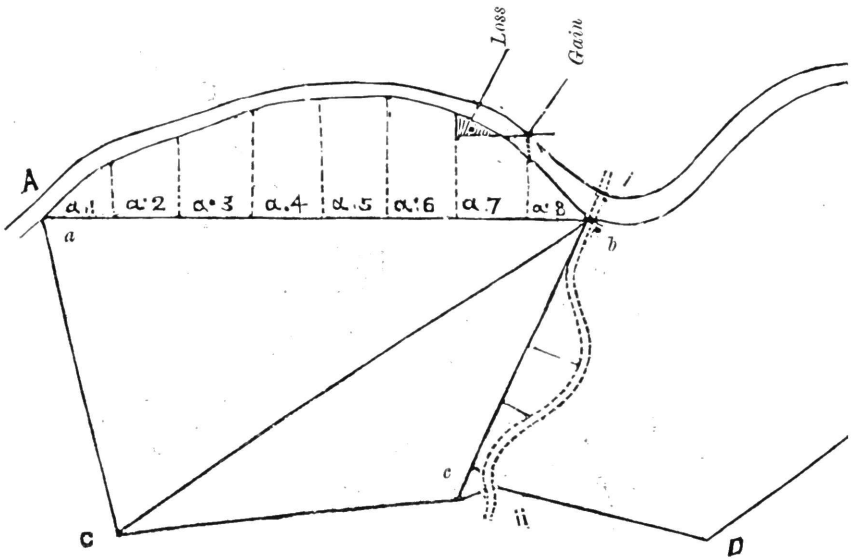
CONTRACTOR'S METHOD,

Take half the height of D C, multiply by width of road D A obtain average of each pair of sections and multiply by the distance between them. Result number cubic feet.

NOTE.—Sections are generally 100 or 50 feet in length.

To find the area on a plan of any piece of land that it is proposed to block off separately, say for subdivision of weeding contracts,—

(F. L.)



Suppose the block on the plan to be that contained within the points A B C D and E and it is intended to use the path i,ii as a subdivision and it is required to know the area of A C i,ii on the left of the path. Draw the lines a b and b c.

On the same scale as the plan is constructed to, lay off the equidistant perpendiculars a1, a2, a3, &c., on both lines so that they touch the broken edge formed by the bent line A B, and i, ii. It will be seen, especially in the case of offset a7 that the line nearest a8 is much shorter than the side next to a6, so that if a line is drawn parallel to the base a b, from the top of the line on the right of portion a7, to a6, it will exclude the shaded area, but will include an equal area not shaded. It follows therefore that if gains equals losses, as they do in this case, that we need only take the distance from the point of intersection of the broken line with the equalising line, and measure from that point by the shortest direction, to the base line a b. In like manner let all the other offsets be treated,

(F. L.)—(Contd.)

Care should be taken that the offsets should be put at say one chain apart on the same scale as the plan, and the sums of their mean lengths as described above be taken and multiplied by the width of the interval. The remainder of the figure A b c C. can be reduced to two triangles by connecting C with b, the area of which, added to the sums of the offset pieces, equal the total area required.

Thus area of C a b ..	=	1,742.136	sq. Links.
.. of C b c ...	..	994.200	.
. of Offset A b	.	821.640	,
, of , b c i i i	...	98,660	
Total in sq. Links	...	<u>3,659,630</u>	sq. Links.

To Reduce Square Links to Acres

Take preceding case 3,659,630.

Point off five places of decimals from the right, and it will leave 36 cut off. Multiply the remainder by 4, and point off as before, and it will leave 2 to the left. Again multiply the last remainder (38,520) by 10, and the remainder will be 15 to the left, after pointing off decimals as at first. The area of the figure therefore is 36 acres, 2 roods and 15 perches.

To lay out a right Angle with Measuring Tape.

Take a stout pin and drive it through the ring eye at the end of the tape and fix the same to the ground. Run out 16 feet, and at that point put in a second pin, taking care that it be firm and also perpendicular. Next run off 32 feet more making 48 feet altogether and let the 48th foot point exactly touch the first pin, put through the tape ring when starting the operation. Now take up that point in the slack of the tape at the 28th foot on the tape, and move it till it is straight and tight with the first pin and the second, and insert a third pin. This last will therefore be at right angles to the first two, because $16 \times 16 = 256$ and $12 \times 12 = 144$ and $144 + 256 = 400$ of which the square root is 20, vide 47th : Prop · I Euclid,

Any like multiples of 3, 4 and 5 for the sides will form a right angled triangle.

NOTES.

RAINFALL AND ALTITUDES.
INTEREST TABLE.

RAINFALL.

(Ceylon Handbook and Directory.)

Height above Sea level.	Stations.	Average total rainfall per annum.	Avg. number of rainy days per annum.
250	Awisawela ...	116.26	199
5,210	Agra Patna (Holmwood)	101.03	196
295	Anuradhapura ...	54.72	105
400	Awisawella (Dunedin)	175.42	172
4,200	Badulla (Gourakele)	98.08	150
26	Batticaloa ...	57.59	103
4,300	Bogawantalawa (St. John Del Rey)	109.89	232
—	Balangoda (Mahawalatenne)	88.14	142
1,036	Bandarawella (Post Office)	67.27	158
50	Chilaw (Horakele)	67.87	100
40	Colombo ...	88.33	172
3,500	Deltota (New Forest)	107.71	188
4,300	Dikoya (Annfield)	112.69	214
3,641	Dikoya (Blair Athol)	141.83	220
48	Galle ...	90.51	201
1,600	Gampola (Mariawatte)	94.27	190
3,600	Haputale (Meeriabedde)	99.20	155
4,141	Hatton (Police Station)	141.04	261
5,000	Hewaheta (Hope)	122.06	168
300	Horana (Rayigama)	160.58	173
9	Jaffna ...	11.65	72
1,654	Kandy ...	81.43	192
—	Kegalle (Yatederiya)	115.69	183
3,800	Kotmale (Gingran Oya)	148.65	195
381	Kurunegala ...	82.74	171
800	Madawalatenna (Dea Ella)	90.33	155
2,600	Madulsima (Hospital)	101.82	132
12	Mannar ...	38.11	64
4,200	Maskeliya (Maskeliya Hospital)	123.93	181
1,100	Matale (Crystal Hill)	78.98	142
5,150	Maturata (Kurundu-Oya)	104.91	167
1,400	Morawaka (Anningkande)	132.08	182
2,200	Mupana (Maragalla)	91.73	160
1,600	Nawalapitiya (Sembawatte)	215.39	211
6,188	Nuwara Eliya ...	94.71	199
300	Neboda (Polgahakande)	142.56	192

RAINFALL.—(Contd.)

Height above Sea level.	Stations.	Average total rainfall per annum.	Avg. number of rainy days per annum.
13	Pallai (Kotta) ...	... 54.87	... 74
425	Polgahawela (Eadella)	.. 95.22	... 154
4,800	Pundaluoya (Dunsinane)	... 135.53	... 215
3,500	Pussellawa (Sogama)	... 116.99	.. 188
27	Puttalam ...	... 46.63	... 83
50	Ragama (Orange Hill)	... 95.40	... 161
750	Rakwana (Maduwanwala)	... 65.55	... 136
5,000	Ramboda (Labookellie)	... 118.38	... 204
3,300	Rangalla (Kobonella)	... 150.79	... 197
84	Ratnapura ...	... 149.93	... 207
2,400	Rattota (Gammaduwa)	... 114.29	... 150
1,500	Teldeniya (Rajawella)	... 59.00	... 125
12	Trincomalee ...	.. 63.33	... 111
300	Urugalla (Woodside)	... 108.57	.. 179
—	Veyangoda (Franklands)	.. 98.11	... 167
3,800	Watawalla (Coldstream)	.. 159.56	.. 192
2,500	Wattagama (Gillardstown)	.. 94.38	... 170

Table for obtaining approximate heights in Ceylon from readings of an Aneroid Barometer.—(Ceylon Handbook and Directory.)

Barometer in Eng. inches	Height in feet.	Barometer in Eng. inches	Height in feet.	Barometer in Eng. inches	Height in feet.	Barometer in Eng. inches	Height in feet.	Barometer in Eng. inches	Height in feet.	Barometer in Eng. inches	Height in feet.
30.0	0	28.8	1,168	27.6	2,384	26.4	3,644	25.2	4,919	24.0	6,315
29.9	95	28.7	1,267	27.5	2,487	26.3	3,751	25.1	5,061	23.9	6,430
29.8	191	28.6	1,367	27.4	2,591	26.2	3,857	25.0	5,173	23.8	6,545
29.7	288	28.5	1,468	27.3	2,696	26.1	3,966	24.9	5,283	23.7	6,660
29.6	384	28.4	1,569	27.2	2,800	26.0	4,073	24.8	5,392	23.6	6,774
29.5	480	28.3	1,670	27.1	2,907	25.9	4,182	24.7	5,504	23.5	6,894
29.4	578	28.2	1,772	27.0	3,013	25.8	4,291	24.6	5,618	23.4	7,014
29.3	677	28.1	1,873	26.9	3,118	25.7	4,400	24.5	5,733	23.3	7,132
29.2	776	28.0	1,975	26.8	3,222	25.6	4,509	24.4	5,849	23.2	7,251
29.1	873	27.9	2,078	26.7	3,327	25.5	4,619	24.3	5,965	23.1	7,370
29.0	970	27.8	2,178	26.6	3,432	25.4	4,729	24.2	6,081	23.0	7,491
28.9	1,069	27.7	2,280	26.5	3,539	25.3	4,840	24.1	6,198	—	—

RAINFALL.—(Contd.)

INDIAN TEA DISTRICTS.

Gauhati	...	70.69 inches	Dhubri	...	107.39 inches
Nowgong	...	77.68 "	Dibrugarh	...	114.78 "
Tezpur	...	86.08 "	Silchar	...	118.51 "
Sibsugar	..	92.33 "	Sylhet	...	167.32 "

TABLE OF INTEREST.

A Table for finding the Interest of any sum of money at any rate of Interest for any number of days.—(Ceylon Handbook and Directory.)

Product.	Rs.	Cts.	Product.	Rs.	Cts.	Product.	Rs.	Cts.
50,000,000	1,369	86	100,000	2	74	600	0	2
10,000,000	1,095	89	90,000	2	47	500	0	1
30,000,000	821	92	80,000	2	19	400	0	1
20,000,000	547	95	70,000	1	92	300	0	1
10,000,000	273	97	60,000	1	64	200	0	1
9,000,000	246	58	50,000	1	37	100	...	...
8,000,000	219	18	40,000	1	10	90	...	...
7,000,000	191	78	30,000	0	82	80	...	...
6,000,000	164	38	20,000	0	55	70	...	..
5,000,000	136	99	10,000	0	27	60	...	.
4,000,000	109	59	9,000	0	25	50	..	...
3,000,000	82	19	8,000	0	22	40	...	...
2,000,000	54	79	7,000	0	19	30	...	...
1,000,000	27	40	6,000	0	16	25	...	...
900,000	24	66	5,000	0	14	15	...	..
800,000	21	92	4,000	0	11	10	...	..
700,000	19	18	3,000	0	8	5	...	...
600,000	16	44	2,000	0	5	...	...	...
500,000	13	70	1,000	0	3	...	...	...
400,000	10	96	900	0	2	...	...	...
300,000	8	22	800	0	2	...	...	...
200,000	5	48	700	0	2	...	...	...

RULE.—Multiply the principal by the rate ; multiply the product by the number of days ; then take from the above table the several sums which stand opposite the several parts of the quotient and add them together for the interest required.

INTEREST, - SIMPLE AND COMPOUND.—(Molesworth.)

C = Capital.

i = Rate of interest in decimals of 100. For example, 5 per cent. = .05.

3½ per cent. = .035.

n = Number of years.

S = Sum of capital and interest together after n years.

Simple interest $S = C \times i n$.

Compound interest $S = C (1 + i) n$.

***THE LABOUR SUPPLY,
MEDICAL WANTS ORDINANCE,
AND MEDICAL NOTES.***

TIN TICKET SYSTEM.—AMENDED REGULATIONS.

The attention of Superintendents of Estates is invited to the following amended Regulations under date 4th December, 1902 :—

1. It is necessary that each immigrant cooly should have a tin ticket. The letter and number on that ticket supply all the information that is required to enable the Superintendent at Ragama to forward the cooly to the estate. Either one ticket may be given to each individual cooly on his departure to enable him to return, or a supply may be given to kanganies who are going to the Coast to bring coolies.

2. In point of fact the system is simply one by which coolies are forwarded as packages of goods, the tin ticket being the address. By its means a cooly travelling from Tuticorin, Tataparai, Tondi, Ammapatam, or Paumben is delivered at the railway station nearest to his estate without the necessity for his expending a cent on his way. All his expenses are borne by Government and recovered subsequently from the estate to which he goes, through the local Kachcheri. Individual numbers as well as estate numbers are entered on the tickets, thus :



If the "17" is entered on the check-roll it will give valuable information as to the identity of the person who presents the ticket.

3. All estates must be registered at the local Kachcheri, where a number will be assigned to each estate, and tin tickets will be issued if required. Tin tickets are supplied at Rs. 2.50 per hundred, stamped with the district letter and estate number, and consecutive individual numbers.

Even if no tin tickets are required, registration of the estate is necessary to enable the Superintendent to issue certificates for coolies travelling within the Island. These certificates must be on the form issued by the Railway Department.

4. In the case of large estates, so many numbers should be allotted to each kangany. These numbers being entered on the bill from the Kachcheri, it will be seen at once to which kangany the coolies belonged. Care should be taken to issue the numbers consecutively. All tin tickets issued should be collected on the arrival of the coolies on the estate, checking the individual numbers and keeping them under lock and key.

TIN TICKET SYSTEM.—AMENDED REGULATIONS. (*Contd.*)

5. Immigrant coolies who have received advances can still pay their expenses on the journey, but they can no longer obtain cheap cooly rates by rail and steamer, except on the production of tin tickets.

6. All coolies holding tin tickets will be despatched by the 6 a.m. train on the morning of the second day after their arrival at Ragama. Thus, coolies who arrive on Monday will be despatched by the morning train on Wednesday, Tuesday's arrivals on Thursday, and so on. If, however, the estate is so far from a telegraph station that the kangany has not time to meet Wednesday's train after the receipt of a telegram despatched from Ragama on Monday afternoon, the Superintendent of the estate should write to the Superintendent of the Cooly Camps at Ragama, stating the number of days' detention that is necessary; these instructions will be carried out. Thus, if the Superintendent is satisfied that he cannot meet Monday's arrivals before Thursday, or even Friday, the coolies will be despatched on the day named. The telegram will be in one of the following forms:—

“5, 2, 1, Saturday, 42, Ramasamy, second,” or

“1 woman, 2 children, Saturday, 42, Ramasamy. second.”

The first of these means that five men, two women, and one child are being forwarded on Saturday; “42” is the first individual number on their tickets; “Ramasamy” is the name of their kangany; and “second” is the number of the division, in the case of large estates, to which they belong. The second form is used when there are only men and women, men and children, or women and children in the gang.

The day mentioned will be that of departure from the camp, and therefore that of arrival at the railway station. Kanganies who go to meet coolies should have one of the estate tickets. Each cooly will of course have a similar ticket, and the letter and number of the estate will be entered on the railway ticket, so that the Stationmaster can point out to the kangany the coolies who belong to him. If the coolies, whose departure from Ragama has been telegraphed, do not arrive by the proper train, the Superintendent should at once communicate with the Stationmaster, and, failing a satisfactory reply, write to the Superintendent at Ragama.

7. It must be distinctly understood that Government does not hold itself responsible for the safe delivery of the coolies on the estate, but merely at the railway station nearest to their estate. Any Superintendent who does not wish intimation of the arrival of coolies to be sent by telegraph should inform the Superintendent, Ragama Camp, accordingly.

TIN TICKET SYSTEM.—AMENDED REGULATIONS.

(Contd.)

8. Coolies will be given bread and tea before they leave the camp. They will also be given $\frac{1}{2}$ lb. of bread a-piece to take with them. If any Superintendent thinks it necessary that his coolies should receive money for their maintenance between the railway station and the estate, an amount not exceeding 50 cents a cooly will be paid to each before he is put into the train. The Superintendent must write and state the amount to be given. If such instructions are given, the amount will always be paid to all coolies for that estate; the Superintendent at Ragama cannot undertake to issue it to some coolies and not to others.

9. Payment of the expenses incurred on account of coolies must be made to the local Kachcheri just in the same way as hospital bills. In correspondence with reference to accounts, Superintendents should always refer to the serial number in the account.

TIN TICKET NOTES.

Indian Rail Fares.—Space does not allow of all the fares on the South Indian Railway being given, but the cost is a little over a cent a mile for a third class passenger. The South Indian Railway time and fare table (price 2 annas) gives a mass of information and a map.

The following is the approximate cost of bringing a cooly from Tattaparai or Ammapatam to the estate :—

	Adults.		Children.	
	Rs.	cts.	Rs.	cts.
At Tattaparai or Ammapatam one meal	0	10	0	10
Rail and Steamer to Ragama	3	39	2	21
Meal at Wharf	0	10	0	10
Telegram	0	25	0	25
Meals at Ragama	0	50	0	50
Rail from Ragama to Hatton	1	06	1	06
Batta on Contingencies	0	35	0	30
	5	75	4	52


From Tondi the rail and steamer fare is Rs. 3.25 for an adult and Rs. 2.12 $\frac{1}{2}$ for a child, the other charges remaining the same.

The maximum charge for a cooly going to, say, the Passara district, would be:—

Tattaparai to Ragama	Rs. 4.46
Ragama to Bandarawella	,, 1.59
Road Expenses	,, 1.00

Rs. 7.05

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ON APPLICATION TO THE MANAGER.

CHATHAM ST., COLOMBO.

DENTAL NOTICE.

Messrs. NEWTON & COLYER, Dental Surgeons, Victoria Arcade (opposite G. O. H.), Colombo. Fully equipped with all the Latest Electrical Appliances, and the only UP-TO-DATE DENTAL OFFICE in the Island.—HOURS from 10 a.m. to 5 p.m. (except Sundays).

RAILWAY REGULATIONS REGARDING COOLIES.

The following amendment of clause 59 of Coaching Rules made by His Excellency the Governor, in Executive Council, under provisions of section 5 of "The Ceylon Railways Ordinance, 1902," was published in the *Government Gazette* dated February 20th, 1903.

59. *Coolies*.—Coolies shall be conveyed at the reduced rate of $1\frac{1}{4}$ cent per mile on the Ceylon Government Railway, as follows :—

- (a) From Tataparai to Ragama, only on production to the Superintendent of Immigration, Tataparai Depot, of tin tickets issued by Superintendents of registered estates, or by the Public Works, Irrigation, or Railway Construction Departments.
- (b) From Ragama to stations on the Ceylon Government Railway beyond Lunawa on the Coast Line, Ragama on the Main Line, and Pannipitiya on the Kelani Valley Line, only on production of tin tickets issued by Superintendents of registered estates, or by the Public Works, Irrigation, or Railway Construction Departments.
- (c) Between other stations on the Ceylon Government Railway, only on production of certificates issued by Superintendents of registered estates, or by the Public Works, Irrigation, or Railway Construction Departments.
- (d) From stations on the Ceylon Government Railway beyond Lunawa on the Coast Line, Ragama on the Main Line, and Pannipitiya on the Kelani Valley Line, to stations on the South Indian Railway or to Tuticorin, only on production of certificates issued by Superintendents of registered estates, or by the Public Works, Irrigation, or Railway Construction Departments.
- (e) Children of coolies to be charged as adults.
- (f) The minimum fare for each cooly to be 25 cents.
- (g) Coolies travelling at the reduced rate are only entitled to such "free" baggage as they may take with them in the carriage, and this must in no case exceed 28 lbs. Government will not be responsible for loss of, or damage to, such baggage.
- (h) Books of certificate forms will be supplied, free of charge, on application in writing to the General Manager of the Railway, Colombo, only to Superintendents of registered estates, and to officers of the Public Works, Irrigation, or Railway Construction Departments, and no other form of certificate will be accepted.
- (i) "Cooly" means every labourer and kangany employed, about to be employed, or discharged from employment on an estate or on any public works in other than domestic labour.
"Estate" means any land in which labourers are employed, and of which ten acres or more are actually cultivated.

[In supplying these new regulations to face page 243, I take the opportunity of calling attention to an erratum on page 227. The last sign on the page should read $2L + T$. The text of the formula is correct.—J. H.]

TIN TICKET NOTES,—(Contd.)

Meals consists of 10 ozs. raw rice (2 lbs. boiled) and 2 curries of fish and vegetables at 11 a.m. and 5 p.m., besides tea and bread in the morning. The travelling diet is $\frac{1}{2}$ lb. bread and plantains.

	1901,	1900,	1899,
Arrivals	... 120,603	207,994	68,393
Departures	... 118,343	112,936	81,629

The estate population is given in the Census return as under :—

	1881	1891	1901
...	... 206,840	... 262,262	... 441,523

NOTE.—A cooly going to the coast and having no intention of returning does not need a ticket, but the usual certificate stating that he is a *bona fide* agricultural labourer, returning to the coast and thus entitled to reduced fare should be supplied. A certificate is also necessary when travelling on the railway from one estate to another. Books of these forms, can be obtained free from the General Manager, Ceylon Government Railway.

There is a Superintendent of Immigration at Paumben, S. India.

Mr. W. B. Boyd is Superintendent at Ragama Camp.

Mr. Anderson is Immigration Assistant at the Wharf.

MONEY ORDERS,

A list of the Post Offices in the Madras Presidency and South India (61 pages), is published under the Authority of the Director-General of the Post Office of India, and is obtainable at the General Post Office Colombo, price 50 cents.

RATES.	Ordinary.		Telegraph.	
	Rs.	Cts.	Rs.	Cts.
On sums not exceeding Rs. 10	...	0 12	...	1 37
Exceeding 10, but not exceeding 25	...	0 25	...	1 50
Exceeding 25, but not exceeding 50	...	0 50	...	1 75
Exceeding 50, but not exceeding 75	...	0 75	...	2 00
Exceeding 75, but not exceeding 100	...	1 00	...	2 25
Exceeding 100, but not exceeding 125	...	1 25	...	2 50
Exceeding 125, but not exceeding 150	...	1 50	...	2 75

Telegraphic charges include the cost of the telegram of advice.

The value of a Money Order on India may not exceed Rs. 150, and may not include the fraction of an anna.

The same remitter is not allowed to obtain in one day Money Orders for a sum exceeding Rs. 600 in the aggregate, drawn on the same office or payable to the same person.

RULES OF THE LABOUR FEDERATION OF CEYLON.

Unanimously passed at the first General Meeting held at Kandy,
on the 17th October, 1898.

(1.) "That a Labour Federation be formed under the auspices of the Planters' Association of Ceylon with the object of checking the steady increase in the amount of so-called Coast Advances.

(2.) "That a Committee shall be appointed annually to manage the affairs of the Federation, five to form a quorum, and that it shall consist of six members to be appointed by the Chamber of Commerce, and of such members of the Committee of the Planters' Association as are members of the Federation. The Chairman and Secretary of the Planters' Association if members of the Federation, shall be ex-officio Chairman and Secretary of the Federation.

(3.) "That Meetings, either General or Committee, shall be called from time to time by the Chairman at his discretion, or when he shall be requested in writing so to do by five members of the Committee or seven members of the Federation, and that proxies shall be admitted at the General Meetings."

(4.) "That no member of this Federation shall pay more for any gang taken on from another estate which belongs to the Federation than the amount of the tundu."

(5.) "That no member of the Federation shall take on any gang, or cooly, from a Federated Estate without the Federation tundu or a discharge note granted by a member. Members of the Federation, before engaging coolies said to come from the Coast, shall fully satisfy themselves that they are *bona fide* Coast coolies. In the absence of a discharge note, no "notice" kanganies or coolies are to be employed, without reference to the last employer."

(6.) "That all tundus given by members of the Federation shall be upon the form to be supplied by the Federation,"

(7.) "That the members of the Federation bind themselves to abide by the rules of the Federation for one year certain, and thereafter to give six months' notice of their intention to resign membership, and that a list of members be published annually and issued to members."

(The following Resolutions have been issued by the Committee.)

"That the Committee of the Labour Federation recommend that members who feel aggrieved at breaches of the Federation should not blame the Federation for inaction in matters which have not been brought before them but should report such breaches at once to their local District Sub-Committee and that the local Sub-Committee should at once report the result of their decision to the Central Committee. (2.) That the Committee of the Labour Federation deprecate the premature publication of complaints (often one-

RULES OF THE LABOUR FEDERATION OF CEYLON— (Continued.)

sided) in the local press. (3.) That it be pointed out to members that by allowing their Kanganics to take over debts of gangs who have brought tundus thereby actually advancing more than the amount of the tundu, they are breaking the spirit of the main rule of the Federation. (4.) That a copy of the above resolution be forwarded to all the District Associations with a request that they be brought prominently before members." February, 1900.

"That a circular be issued to all the members of the Federation through the District Associations calling to their notice the increase of bolting coolies and requesting that personal attention of Managers be directed to prevent their names being entered on the Estate Check Roll. The Committee further recommend that such steps be taken as will prevent Canganics harbouring runaway coolies." June, 1899.

NOTE :—There are 768 estates on the roll.

THE LABOUR ORDINANCE.

Ordinance No. 13 of 1889 as Amended by No. 7 of 1890.

Preamble.—Whereas it is expedient to amend in the particulars herein-after mentioned the Ordinance No. 11 of 1865 ; and whereas it is expedient to repeal the Ordinance No. 17 of 1862 and the Ordinance No. 16 of 1881, and to make more suitable provisions in lieu of those contained therein: Be it therefore enacted by the Governor of Ceylon, by and with the advice and consent of the Legislative Council thereof, as follows :—

1. *Repeal.*—There shall be repealed as from the commencement of this Ordinance—

- (a) The Ordinance No. 17 of 1862, intituled " An Ordinance to ascertain the proportion of mortality amongst the natives of India employed in agricultural and other labour in Ceylon " ;
- (b) The Ordinance No. 16 of 1881, intituled " An Ordinance to amend the Ordinance No. 11 of 1865, intituled ' An Ordinance to consolidate and amend the Law relating to servants, laborers, and journeymen artificers under contracts for hire and service, ' and to provide for the speedy recovery of wages due to laborers. "

Proviso.—Provided that this repeal shall not affect -

- (a) any penalty, forfeiture, or punishment incurred in respect of any offence committed against any enactment hereby repealed ; nor
- (b) the continuance of any legal proceeding already instituted, and which may be pending under any enactment so repealed, for the recovery of any wages due, or penalty incurred, before the commencement of this Ordinance,

THE LABOUR ORDINANCE.—(Contd.)

2. *To be read as one with the Ordinance No. 11 of 1865.*—This Ordinance shall, so far as is consistent with the tenor thereof, be read and construed as one with the Ordinance No. 11 of 1865, hereinafter referred to as the principal Ordinance.

3. *Interpretation Clause.*—For the purposes of this Ordinance—

“*Estate*” means any land in which laborers are employed, and of which ten acres or more are actually cultivated.

“*Laborer*” means every laborer and kangani (commonly known as “Indian coolies”) employed on an estate in other than domestic labor.

“*Wages*” means all sums which may be due to a laborer for and in respect of the work and labor done by him on an estate.

“*Employer*” means the chief person for the time being in charge of an estate, and includes the superintendent.

4. *Certain provisions of the principal Ordinance extended to laborers and employers and to acts and defaults of third parties in respect of or in relation to them.*—Except as in this Ordinance otherwise expressly provided, all the provisions, regulations, pains, penalties, forfeitures, and abatementen enacted in the principal Ordinance, so far as they are applicable to monthly servants or their employers, shall extend, and be construed, deemed, and adjudged to extend, to laborers and employers under this Ordinance; and every act or default, by whomsoever done or committed, which is made punishable by the principal Ordinance, if made or committed in respect of, or in relation to, monthly servants or their employers, shall in the like manner be punishable if done or committed in respect of, or in relation to, laborers and employers under this Ordinance.

5. *Verbal and implied contracts of service.*—Every laborer who shall enter into a verbal contract with the employer for the performance of work not usually done by the day, or by the job, or by the journey, or whose name shall be entered in the check-roll of an estate and who shall have received an advance of rice or money from the employer, shall, unless he has otherwise expressly stipulated, and notwithstanding that his wages shall be payable at a daily rate, be deemed and taken in law to have entered into a contract of hire and service for the period of one month, to be renewable from month to month; and every such contract shall be deemed and taken in law to be so renewed unless one month's previous notice be given by either party to the other of his intention to determine the same at the expiry of one month from the day of giving such notice.

6. *Wages how payable and how computed.*—(1) The wages of a laborer shall be payable monthly within sixty days from the expiration of the month during which such wages shall have been earned, and when such wages shall be payable at a daily rate, the monthly wages shall be computed according to the number of days on which the laborer shall have been able

THE LABOUR ORDINANCE.—(Contd.)

and willing to work, whether the employer may or may not have been able to provide him with work. Provided that no employer shall be bound to provide for each laborer more than six days' work in the week.

(2) When the contract of service is determined by one month's previous notice or warning by the laborer to the employer or by the employer to the laborer all wages due to the laborer for his period of service shall be paid in full to him by the employer on the day when such contract is so determined as aforesaid.

(3) In computing the amount of wages due to a laborer for any period of service such laborer shall be debited with the amount of all advance of money made to him, and with the value of all food, clothes, or other articles supplied to him during such period, and which the employer is not liable in law to supply at his own expense.

7. *Exemption from punishment when wages are overdue.*—No laborer shall be liable to punishment for neglecting or refusing to work, or for quitting service without leave or reasonable cause, or for disobedience, or for neglect of duty, if at the time of such alleged offence the monthly wages earned by him shall not have been paid in full within the period specified in sub-section (1) of section 6, and he shall, at least forty-eight hours previously have demanded from his employer the payment of such wages, and the employer shall have refused or failed to pay the same. Provided, however, that no previous demand as aforesaid shall be necessary on the part of the laborer in case such wages, exclusive of "head money" (*tale kási*) in the case of kanganyics, shall amount to ten rupees or more.

8. *Written contracts*—No contract of service entered into with a laborer for any period of time longer than one month shall be valid in law unless the same is executed in all respects in strict accordance with the requirements of the principal Ordinance as to written contracts and all written contracts between laborers and employers shall be subject to, and governed by, the provisions of the principal Ordinance relating to written contracts.

9. *Wages made a first charge on estate*—Laborers employed on an estate shall, anything in the Ordinance No 22 of 1871 to the contrary notwithstanding, have in respect of their wages, whatever the period for which such wages may be due, but not exceeding the sum of twenty rupees earned by each laborer, a first charge upon such estate, and such first charge shall have priority over all claims for rents, dues, or otherwise by any lessors, mortgagees, judgment, execution or other creditors, or by any other persons

THE LABOUR ORDINANCE.—(*Contd.*)

whatever ; and such first charge may be enforced by suit or by claim if instituted or preferred within three months of the last day of the period in respect of which such wages are claimed.

10. *Wages may be sued for in the Court of Requests whatever the amount. Laborers may sue jointly in one suit*—The wages due to any laborer or laborers, whatever may be the amount claimed, shall be sued for in a Court of Requests having in other respects jurisdiction in that behalf ; and it shall be lawful for one or more laborers employed on such estate to institute one suit to recover the wages which may be due, not only to him or them, but also to any other laborer or laborers employed on the same estate whose name or names may appear in the plaint, provided that the Court in which the suit is instituted is satisfied, after due inquiry, that the laborer or laborers suing is or are authorized to sue for and on behalf of the other or others so named as aforesaid

11. *Proprietor of estate to be party defendant.*—In any suit instituted under this Ordinance it shall be sufficient to designate the defendant as the “proprietor of the—— estate,” specifying the name of the estate on which the laborer had been employed, without naming the proprietor or proprietors thereof.

12. *Party sued may claim set-off.*—The party sued or his representative, or other person allowed by the Court to intervene in such suit, shall be entitled to a set-off or counter-claim in respect of any sum of money, or the fair and reasonable price of any food, clothes, or other articles which the employer was not liable in law to supply at his own expense, but which money, food, clothes, or other articles had been advanced or supplied to the laborers as against the wages for which he or they may be suing.

13. *Right of mortgagee.*—It shall be lawful for a mortgagee of an estate to pay and discharge the first charge created by this Ordinance in respect of such estate in favor of the laborers employed thereon ; and upon such payment he shall be entitled to add the amount thereof to the sum due upon his mortgage ; and the amount so added shall be secured by the mortgage held by him.

14. *Proprietor may obtain judgment in same suit against others who have actually employed the laborers.* When the proprietor of an estate is sued under this Ordinance, and he shall by proof adduced satisfy the Court that he did not by himself or by his agent or agents employ all or any of the laborers who are suing him, but that they or any of them were employed on such estate by some other person as trustee, lessee, or mortgagee in possession, he shall be entitled, upon application by him made for that purpose, to have such other person made a party defendant in the same

THE LABOUR ORDINANCE,—(Contd.)

suit at any time before execution is levied, provided that such other person shall have had reasonable notice of such application, and shall have failed to show cause why he should not be joined in the suit. And the Court shall, if satisfied that such other person was primarily liable to pay the amount of wages sued for wholly or in part, and that the same has since the institution of the suit been paid and satisfied by such proprietor, enter a separate judgment therefor as between the proprietor and such other person, with such reasonable costs as it may think fit, and enforce such judgment against such other person by a writ of execution.

Proviso.—Provided, however, that no proceedings had as between such other person and such proprietor as aforesaid shall be permitted in any way to delay the progress of the suit as between the labourers and such proprietor.

15. *Procedure.*—The Rules and Orders in Schedule A hereto shall apply to suits instituted under this Ordinance; and upon any matter not specially provided therein, including the payment of costs, the General Rules and Orders for Courts of Requests shall be followed in so far as the same may be applicable.

16.—*Employers to send returns to Government Agent. Forms of returns to be supplied gratis by Government Agent.*—Every employer shall, on the tenth day of January, on the tenth day of April, on the tenth of July, and on the tenth day of October of each year make to the Government Agent of the Province in which the estate is situate, or to some other public officer who may be appointed by the Governor for that purpose, and of whose appointment a notice shall be published in the *Government Gazette*, true and correct returns, for and in respect of the three months next immediately preceding each of the said four months, containing each and every of the particulars set forth in the form given in Schedule B hereto. The returns shall be made in the English language, and copies of the said form shall be furnished by such Government Agent on the application of the employer free of charge.

Proviso.—Provided that if any of the aforesaid days shall be a Sunday or public holiday, the said returns and declaration shall be made on the next following day not being a public holiday.

17. *Offences. Penalty. Evidence.*—Any employer who shall refuse or neglect to make any returns by this Ordinance required to be made, in the form and on the days herein specified, shall be guilty of an offence, and shall be liable on conviction to a fine not exceeding one hundred rupees; and the production of a certificate under the hand of the Government Agent, to the effect that no returns have been received by him from the person charged, shall in all judicial proceedings be *primâ facie* evidence of such person having refused or neglected to make such returns, as the case may be

THE LABOUR ORDINANCE—(Contd.)

18. *Returns to be sent to Colonial Secretary. General abstracts to be published, and laid before Legislative Council.*—The Government Agent or such other officer as aforesaid shall forward all such returns to the Colonial Secretary, who shall, so soon as convenient, publish, or cause to be published, in the *Government Gazette*, a general abstract of the returns received for any one quarter, in such form as the Governor, with the advice of the Executive Council, shall from time to time require. And an annual general abstract of all such returns for each year shall be laid before the Legislative Council.

SCHEDULE A.

Rules and Orders.

1. *Commencement of suit by filing plaint. Issue of summons to defendant and subpoena to superintendent.*—The suit shall commence by the filing of a plaint setting out the period or proximate period for which wages are due to the plaintiff, or to each of the plaintiffs if there be more than one plaintiff; and thereupon the chief clerk shall issue a summons directed to the defendant requiring him to appear before the Court on a day therein named to answer the claim of the plaintiff or plaintiffs, and shall at the same time, issue a subpoena to the superintendent of the estate requiring him on the same day as that named in the summons to attend and bring with him the check-rolls and any other documents which may be specified in such subpoena and shall at the same time cause a notice in form hereunto annexed to be published in the *Government Gazette* of the two following weeks.

2. *Service of summons prescribed. Superintendent may represent proprietor.*—The summons directed to the defendant shall be served upon the superintendent, or, if the commissioner so directs, shall be affixed to a conspicuous part of the estate, and such service shall be deemed to be good and sufficient service on the defendant; and in every case the chief clerk shall post a copy of such summons to the superintendent directed to such estate. It shall be competent for such superintendent to appear for and represent the defendant in the said suit, and to adduce evidence therein.

3. *Investigation.*—On the day named in such summons, or on any other day to which the commissioner may adjourn or postpone the inquiry, he shall summarily hear and determine the suit and give the judgment thereon for such sum or sums as the plaintiff or plaintiffs may be found entitled to; and in determining the sum due to the plaintiff, or if there be more than one plaintiff the sum due to each of the plaintiffs, the commissioner shall apply any payments, whether in money or in food, clothes, or other articles proved to have been made in partial discharge of wages, towards the payment of the

THE LABOUR ORDINANCE.—(Contd.)

antecedent wages in the order of time in which the same became due, and the commissioner shall in his judgment specify the extent to which the first charge shall apply, and shall declare the estate bound and executable for and in respect of such first charge.

Proviso.—Provided, however, that if the commissioner be satisfied that the sale of any definite portion of the said estate shall be sufficient to satisfy the first charge, he may, in the first instance, order accordingly.

4. *Formal decree.*—As soon as may be after the judgment is pronounced a formal decree bearing the same date as the judgment shall be drawn by the commissioner in the form hereto annexed, specifying (1) the total amount due to the plaintiffs and (2) the amount for which the estate is bound and executable for and in respect of the first charge.

5. *Two separate writs may issue.*—The commissioner on non-payment of the amount of the first charge shall issue a writ in the form I. hereto annexed, and on non-payment of the balance (if any) due under the decree shall issue a writ in the form II. hereto annexed, which writs may issue simultaneously or independently of each other.

6. *Judgment how satisfied.*—The judgment in the suit shall not be declared satisfied or discharged save by payment into court of the total amount decreed, or by deposit in court of such amount by levy in execution; and when such judgment shall be satisfied by payment into court, or when payment shall be made of the first charge, the commissioner shall issue a certificate to that effect under his hand to the person making such payment.

7. *Conveyance by fiscal.*—The fiscal shall execute a conveyance of the said estate or part thereof on sale in execution in favor of the purchaser in the form hereto annexed, and the same shall be sufficient to vest title in the purchaser free from all encumbrances.

8. *Distribution of sum deposited.*—Upon the payment into or deposit in court of the amount decreed or levied, the commissioner shall pay or distribute the same to or among the plaintiff or plaintiffs adjudged to be entitled thereto, and make a record thereof.

9. *Intervention by mortgagee.*—It shall be competent for any mortgagee or any other person interested in the suit to intervene therein, if allowed, by the Court to do so.

Notice.

Notice is hereby given that a suit has been instituted in the Court of Requests of ———, by ——— [insert number] laborers of ——— estate, against the proprietor or proprietors thereof under the Ordinance No. 13 of 1889 for the recovery of their wages amounting to Rs. ———.

This ——— day of ——— 190 .

Chief Clerk.

THE LABOUR ORDINANCE,—(Contd.)

Form of Decree.

It is ordered and decreed that the proprietor of the _____ estate do forthwith pay into court for the use of the plaintiffs the sum of Rs. _____, and that the said _____ estate [or if a portion only of the estate is declared bound and executable, here describe definitely the said portion of the estate], bounded or reputed to be bounded on the north by _____, east by _____, south by _____, and west by _____, containing in extent _____ acres, is bound and executable to the plaintiffs for a first charge to the extent of Rs. _____.

It is further ordered and decreed that the proprietor of the said estate do pay to the plaintiff the costs of this action.

Form of Writ I.

Writ of execution against estate for first charge.

In the Court of Requests of _____.

_____, Plaintiff

Vs.

Proprietor of _____ estate, Defendant.

To the Fiscal of the _____ Province.

Whereas by a judgment pronounced by the Commissioner of the Court of Requests of _____, in case No. _____, it was ordered and decreed that the proprietor of the _____ estate to pay into court, in the said suit, the sum of Rs. _____; and the said _____ estate (hereafter described) was thereby declared bound and executable for a first charge to the amount of Rs. _____; and whereas the proprietor of the said _____ estate hath made default in paying the said amount :

Levy and make of the said estate, bounded or reputed to be bounded on the north by _____, east by _____, south by _____, and west by _____, containing in extent _____ acres declared by the judgment of this court bearing date the _____ day of _____, bound and executable for a first charge to the extent of Rs. _____, by seizure, and, if necessary, by sale thereof [or part thereof to be defined] the sum of Rs. _____, and have that money before this court on the _____ day of _____ to render to the said _____, and inform this court for what sum or sums, and to what person or persons, you have sold the said estate [or part thereof], and have you there this mandate.

By order of court,

Chief Clerk,

THE LABOUR ORDINANCE.—(Contd.)

Form of Writ II

Writ for unsecured balance.

In the Court of Requests of ———, ———, Plaintiff.

Vs.

Proprietor of ——— estate, Defendant.

To the Fiscal of the ——— Province.

Whereas by a judgment pronounced by the Commissioner of the Court of Requests of ———, in case No. ———, it was ordered and decreed that the proprietor of the ——— estate do pay into court the sum of Rs. ———, of which sum the sum of Rs. ——— was declared a first charge on the ——— estate, and the balance sum of Rs. ——— has not been paid into court :

Levy and make of the houses, lands, goods, and credits of the proprietor of the said ——— estate by seizure, and, if necessary, by sale thereof, the sum of Rs. ———, and have the money before this court on the ——— day of ——— to render to the said ———, and inform this court for what sum or sums, and to what person or persons, you have sold the said property respectively, and have you there this mandate.

By order of Court.

Chief Clerk.

Form of Conveyance by Fiscal.

Whereas by a judgment pronounced by the Commissioner of the Court of Requests of ———, in case No. ———, it was ordered and decreed that the proprietor of the ——— estate do pay into court, in the said suit, the sum of Rs. ———, and the said estate (hereinafter described) was thereby declared bound and executable for a first charge to the amount of Rs. ——— : And whereas the proprietor of the ——— estate hath made default in paying the said amount, and by writ of execution issued from the said Court bearing date ———, directed to the Fiscal for the ——— Province, he was directed to levy the said amount by the sale of the said estate [or part thereof, as the case may be] : And whereas the said estate [or part thereof] was seized in execution under the said writ, and after due notice was exposed to public sale on the ——— day of ———, at ———, by ———, acting under the authority of the said Fiscal, and sold to ——— as the highest bidder, for the sum of Rs. ———, and the said ——— has paid the said sum to the said Fiscal : Now these presents witness that ———, the said Fiscal for the ——— Province, in consideration of the said sum of Rs. ———, paid by the said ———, the

THE LABOUR ORDINANCE,—(Contd.)

receipt whereof the said Fiscal doth hereby acknowledge, hath sold and assigned, and doth by these presents sell and assign unto the said ———, his heirs, executors, administrators, and assigns the ——— estate, bounded or reputed to be bounded on the north by ———, east by ———, south by ———, and on the west by ———, containing in extent ——— acres, and described in the map or diagram annexed, to have and to hold the said estate with its and every of its appurtenance by him the said ———, his heirs, executors, administrators, and assigns for ever free from all incumbrances.

In witness whereof the said Fiscal hath hereunto inscribed his name at ——— this ——— day of ———, the year of our Lord One thousand nine hundred and ———.

Witnesses

Signature of Fiscal.

Schedule B

I.—Return of Labourers employed on the ——— Estate,
in the District of ———, during the Quarter
ended — —, 190 —

Number of Labourers.	Male.	Female.	

II.—Return of Births occurring among Labourers upon the above Estate
during the Quarter.

Date of Birth.	Mother's Name.	Father's Name.

III.—Return of Deaths occurring among Labourers upon the above Estate
during the quarter.

Name.	Age.	Sex.	Name of Village.	Date of Death	Probable Cause of Death.

PROMISSORY NOTES AND CONTRACTS.

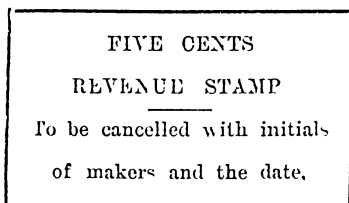
The following extracts are taken by permission from the report of the Special Labour Committee of the Planters' Association.

FORM OF PROMISSORY NOTE.

Rs. 1,000 Kandy, 1st January, 1902.
 On demand I (WE) the under-signed A. (B. and C) (jointly and severally) promise to pay to D. or Order, the sum of One thousand Rupees (Rs. 1,000) currency for value received.

Witnesses

(Signed) E.
 „ F.



(Signed) A.
 „ B.
 „ C.

N. B.—A Promissory note payable on demand, requires a Revenue Stamp of 5 Cents irrespective of the value of the Note.

A Promissory note payable otherwise than on demand, requires Revenue Stamps, which vary according to the value of the Note. See Ordinance No. 3 of 1890, Schedule B Part 1.

(Signed) H. PERCY BORRETT

FORM OF CONTRACT TO WORK FOR A FIXED PERIOD.

- 1.—I, the under-signed, A of do hereby promise and agree with B of to work for him in my trade or occupation as a for the period of from the date hereof at or in any place at which I may be directed by him to attend and carry on such work from the hours of A.M. to P.M. daily at per day.
- 2.—I, the under-signed B. of do hereby promise and agree to employ the said A. as a and to pay him at the rate of per day and to give him days work in a week and to pay him the said wages monthly.
- 3.—I, the said A. acknowledge to have received the sum of Rs. from the said B in advance, which I agree shall be deducted from my wages at the rate of Rs. per mensem.

(Signed) A.
 „ B.

PROMISSORY NOTES AND CONTRACTS.—(Contd.)

I, Police Magistrate of.....,do hereby certify that this Contract was fully explained to the parties thereto and that they fully understand the terms thereof and are desirous to fulfil the same.
day of..... 190.....

Police Magistrate.

NOTE. Every Contract must be executed in triplicate. The servant must be given one copy and the Police Magistrate must preserve another, and allow any person interested to inspect the same.

No Contract is valid if made for a longer period than three years.

Vide section 7 of Ordinance No. 11 of 1865.

(Signed) H. PERCY BORRETT.

[NOTE.—This contract may be signed before a Justice of the Peace, in which case one copy must be forwarded to the Police Court.]

On behalf of the Special Committee Mr. Philip wrote to Mr. Borrett asking him to obtain Legal opinion as to the validity of Kanganies giving notice to leave on behalf of their coolies.

Mr. Borrett wrote:—

As far as I understand the matter, a kangany frequently gives notice to a Superintendent that he and his coolies will quit service; even when the coolies, or some of them, do not wish to leave. They are practically intimidated by the kangany to whom they owe money. In other words the kangany gives notice without being authorized to do so by the cooly.

Owing to the hold the kangany has over his cooly, when the notice to quit expires, the cooly, although he does not wish to leave the Estate and has not authorized the kangany to give notice on his behalf, is generally forced to do so by the kangany.

What the Superintendent desires is, that each cooly should be bound to give notice personally.

I can find nothing in the Labour Ordinances which prevents a kangany or proctor or any one else giving a Superintendent notice to leave on behalf of a cooly and on the other hand, there is nothing in the Ordinances which compels each labourer to give notice to quit.

If this is so, I take it that a cooly can authorize any person to give notice to quit on his behalf and that the law does not require each cooly to give notice for himself.

Counsel is requested to advise generally on the matter.

(Signed) H. PERCY BORRETT.

PROMISSORY NOTES AND CONTRACTS.—(Contd.)

COUNSEL'S OPINION.

30th August, 1902.

The Contract of service is between Planter and each individual cooly, the notice to quit therefore must be given by the cooly. Can he give this notice through his Kangany? or through his Proctor? I see nothing in the Ordinance which prevents his doing so. The question of authority in each case will be one of fact. If the party giving the notice, be he Kangany or Proctor, has been duly authorized in that behalf by the cooly the notice will be a good notice.

(Signed) FREDERICK DORNHORST,
Advocate.

BOLTERS.

Printed plaint forms can be obtained at the Police Courts and should be filled up as described below. Warrant forms can also be filled up beforehand and both presented to the Magistrate for signature simultaneously.

COMPLAINT.

In the Police Court of *Balangoda*.

On this *1st day of April, 1902*.

I. X. Y. Z. of *A. Estate* hereby complain that on the *25th day of December, 1902*, at *A. Estate* within the jurisdiction of this Court, *Ramasami of A. Estate and presently of B Estate, Jaffna* being an agricultural servant under a verbal contract of hire and service for the period one month, and renewable from month to month, quitted the service of *his (or her)* employer Y. Y. Z. without leave or reasonable cause AND HAVING LESS THAN 60 DAYS PAY DUE HIM (OR HER)* before the end of *his (or her)* term of service or previous warning of *his (or her)* intention to determine such contract, and thereby committed an offence punishable under section 11 of the Ordinance No. 11 of 1865.

Sworn to before me.

Complainant.

.....

Police Magistrate.

* NOTE.—These words do not appear in the printed form but are essential.

THE MEDICAL WANTS ORDINANCE,

(Extracts from No. 17-1880)

The superintendent of every estate shall, upon a written requisition from the medical officer in charge of the district, send to the hospital of the district any labourer requiring hospital treatment, unless he shall refuse to go.

The superintendent of any estate may send to the hospital of the district any labourer appearing to him to require medical treatment.

For every labourer sent to a hospital under either of the two preceding clauses, the estate from which he is sent shall be liable for the payment of the sum of thirty cents a day for every day such labourer is in hospital not exceeding thirty days. Such payment to be made to the Kacheheri to the credit of the Medical Aid Fund.

It shall also be the duty, as far as may be practicable, of each district medical officer upon being required so to do by the superintendent of any estate in his district, to visit any sick labourer on such estate.

For every such last mentioned visit to an estate, the estate shall be liable for the payment into the Kachcheri of a fee of two rupees and fifty cents, which fee shall be carried to the credit of the Medical Aid Fund.

The following duties are hereby imposed on every superintendent of an estate:—

- (a) To maintain the lines on the estate in fair sanitary condition.
- (b) To inform himself of all cases of sickness on the estate, and to take such steps as he may deem best for the immediate relief of the sick,
- (c) To send labourers to hospital as required by the 13th clause.
- (d) To send for the District Medical Officer in any case of serious illness or accident.
- (e) To inform the District Medical Officer within forty-eight hours of every birth or death upon the estate.
- (f) To keep a register of immigrant labourers employed on the estate, and of all immigrant labourers arriving or departing therefrom, and of all births and deaths upon the estate, in such form as may be prescribed by the Governor, with the advice of the Executive Council.
- (g) To supply every female labourer employed upon the estate and giving birth thereon to a child with sufficient food and lodging, for fourteen days after the birth of such child, and to take care that the female labourer be not required to work on the estate for one month, unless the district medical officer shall report sooner that she is fit to work.

THE MEDICAL WANTS ORDINANCE,—(Contd.)

Any superintendent who shall refuse or neglect to perform any of the duties hereby imposed on superintendents shall be guilty of an offence, and shall be liable on conviction to a fine not exceeding fifty rupees.

It shall be the duty of every kangani employed upon an estate to give information to the superintendent of every case of sickness in his gang, and any kangani who shall neglect or refuse to give such information to the superintendent shall be guilty of an offence, and liable on conviction to a fine not exceeding twenty rupees.

When any sum of money shall be payable under the 15th or 19th clause of this Ordinance, it shall be the duty of the Government Agent to give notice in writing to the superintendent of the estate in respect of which the same is payable, requiring the payment thereof within one month after such notice, and in default of such payment it shall be lawful for the Government Agent or any person authorized by him in writing in that behalf to seize, once or oftener, all the crops, live stock and implements, or any part thereof found on the estate, liable in respect of such sum, or any other article or thing whatsoever belonging to the proprietor or any of the proprietors of such estate, until the full amount due by such estate shall be recovered. If there be no sufficient crops, live stock or implements on such estate to realize the amount due, it shall be lawful for the Government Agent or other person authorized as aforesaid to cause the timber on the said estate to be cut, or the materials of the buildings erected thereon to be removed, and to sell the same. And, unless the sum due shall be sooner paid, with the costs and charges incurred in respect of such seizure, it shall be lawful for such Government Agent or any person as aforesaid to sell the property so seized by public auction at any time after thirty days from the date of seizure; perishable property, however, may be sold within ten days from the date of such seizure. Provided however that no seizure shall take place under this clause for any sum of money which shall have been in arrear for a period of one year.

Any property so seized, as aforesaid, may be removed for safe custody, pending the sale thereof, to such place as the person directing the seizure may think fit; and in the case of the seizure of any property which cannot conveniently be removed, it shall be lawful for the person making the seizure to place and keep a person in possession thereof pending such sale.

The cost and charges of seizure and sale shall also be payable from the proceeds of the property seized, and they shall be as follows :

- (1) For cost of proceeding to the house or land of the party in default in order to seize property,—a charge not exceeding eight per centum on the amount due

THE MEDICAL WANTS ORDINANCE.—(Contd.)

- (2) For removal of the goods seized, in case such removal takes place,— a charge not exceeding eight per centum on the amount due.
- (3) For keeping the same in safe custody in case of such removal,—a charge not exceeding fifty cents per day.
- (4) For keeping a person in possession, if the goods seized are not removed,—a charge not exceeding fifty cents per day.
- (5) For the expenses of sale, where any takes place,—a charge not exceeding two and a-half per centum on the net produce of the sale.

It shall be lawful for the Government Agent or person authorized, as aforesaid, to break open or cause to be broken open in the day time any house or building for the purpose of seizing property in pursuance of this Ordinance if he shall have affixed to a conspicuous part of such house or building, three clear days previously, a notice of his intention so to do.

In the event of a sale of property seized, the Government Agent, at whose instance such seizure was made, shall, after deducting the amount due by the defaulter, and also the costs and charges payable under clause 25, restore the overplus arising from such sale, if any there be, to the owner of the property sold.

Whoever shall wilfully obstruct any person in the performance of any duty imposed upon him or in the exercise of any authority vested in or conferred upon him under or by virtue of this Ordinance, shall be guilty of an offence, and shall be liable on conviction to a fine not exceeding fifty rupees, or to imprisonment with or without hard labour for any term not exceeding three months.

(Extract from No. 9.—1882.)

It shall be the duty of each Superintending Medical Officer :—

- To visit the cooly lines upon every estate in the districts which may be assigned to him by the Governor, at least once in every six months, and upon the occasion of each visit to call the attention of the superintendent to any defect in the sanitary condition of the cooly lines.
- To inspect the labourers employed on the estate with a view of ascertaining their state of health and whether they have duly vaccinated.
- To inspect the hospitals and dispensaries within his district, and to inquire into any complaints which may have been made respecting the working of such hospitals or dispensaries.

REGULATIONS.

The following regulations have been issued from time to time under section 22, of ordinance No. 17 of 1830.

The Medical Officer or Medical Assistant is bound to visit sick labourers when required to do so by the person in charge of an estate. The charge for such visit is R2.50, which goes to the credit of the Medical Aid Fund. The charge is not R2.50, for each sick labourer, but for each visit to the estate. For the one fee any number of sick labourers shall be examined and prescribed for but the names of such Laborers must be entered on the Request Form either at the time it is sent, or immediately after the arrival of the Officer on the Estate. The sick must be pointed out to the Medical Officer. It forms no part of the latter's duty to search for the sick on an estate.

Estate labourers are admitted to hospital, attended on the estate, or at the dispensary only when a request signed by the person in charge of the estate is made on Form 1, except the case be serious. This form and all other forms, can be obtained on application from the hospital or dispensary free of charge.

Medical Officers, or Medical Assistants are not permitted to prescribe for sick labourers, unless they have been previously seen at the Hospital Dispensary or on the estate. But for the convenience of Superintendents, any of the following compounded medicines will be issued if applied for by name, from Dispensaries when value does not exceed Rs. 5; when it does, from Civil Medical Stores on application to the P. C. M O, viz., Eye lotion Alum gargle, Blackwash, Carbolie lotion, Carbolie oil, Blue-stone lotion, Astringent mixture, Cinchona bark mixture, Cough mixture, Rheumatic mixture, Tonic mixture, Astringent pill, Astringent powder, Astringent powder for children, Purgative powder, Fever mixture, Fever powder.

Medical Officers and Apothecaries in charge, appointed under clause 9, Ordinance of 1882, are permitted to engage in private practice provided they do not allow it to interfere with the due performance of their official duties.

Apothecaries other than those in charge and Dispensers are strictly forbidden to engage in any private practice whatever.

Medical Officers in charge will be held responsible that this rule is observed, and any infringement of it is at once to be reported as directed in Regulation No 12.

REGULATIONS,—(Contd.)

FEES FOR VISITS, &c.

The following have been settled under clause 22 (c) of Ordinance No. 17 of 1880 as the fees to be paid to the District Medical Officer, or Medical Assistant in charge, or to those duly appointed to act for them :—

(1.) Fee payable by Proprietors and Superintendents in midwifery cases R30.

(2.) Fee for a visit to the wife or children of a Proprietor or Superintendent R3.50 with mileage at the rate of 37½ cents for each mile travelled, each way (with a maximum of R15.)

(3.) The fee for a visit to an Assistant Superintendent, Conductor, Tea-maker, carpenter, mason, kanakapillai, storckeeper, writer, their wives and families, or to any person other than a Proprietor or Superintendent R2.00, with mileage at the rate of 37½ cents a mile each way

The midwifery fee for all those included in (3) R15, and mileage 37½ cents a mile each way.

Advice, at the Dispensary or by letter for all included in (3) R1, and R2 for Proprietors and Superintendents.

Medical Officers are directed to afford the required attendance to the above-mentioned, when requested as above, at the *earliest opportunity* that the due performance of their official duties will permit. They are, however, informed that the fees for such attendance should not be entered in any of the returns, nor will they be collected by the Government Agent.

All such patients, classes A and B, are to be entered by themselves in a *separate* portion of Form A. The disease need be mentioned, but each visit or attendance by letter is to be duly recorded therein.

The non-working wives of laborers and of kanganies and the children of kanganies are to be treated in all respects as if they were labourers in terms of clause 2 (f) Medical Wants Ordinance.

It is distinctly laid down that all the directions for the treatment of sick labourers with prescriptions, are to be given in writing to the person in charge of the estate

Complaint against the officers or servants employed under the Medical Wants Ordinance should be addressed to the Principal Civil Medical Officer, Colombo.

Superintendents absenting themselves from their estates should leave a responsible person in charge to attend to the sick, and request the Medical Officer to accept his signature per : pro :

F. BEATO L^{td.}

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ESTATE VACCINATION.

Only children are vaccinated on the first visit so as to obtain a supply of lymph. The second visit is for vaccination proper and the third for inspection. Vaccinations are only performed at early muster.

Superintendents are bound to assist in carrying out the ordinance and in the prevention of offences against the same. It is an offence to fail to have the notice published, not to aid and assist, not to prevent offences and not to give information when requested.

All persons living on an estate whether vaccinated or not are bound to attend at the time and place mentioned in the notice.

Re-vaccination is compulsory on all residents in a house where there is a small-pox patient.

When an individual is ill he may be granted a postponement certificate for a period not exceeding 6 months.

The Vaccinator has to explain to the coolies all the clauses of the ordinance which he thinks necessary.

The operation, except when small-pox is prevailing, should not be performed in the following cases :—

- (a) When the child is under three months old, feeble, sick, or sickly.
- (b) During the periods of dentition or of weaning.
- (c) When there has been recent exposure to the infection of measles or scarlatina, or when erysipelas is prevailing in or about the place of residence.
- (d) In the case of a female when she is pregnant.

The dangers of vaccination are :—

- (a) The occurrence of erysipelas.
- (b) High fever after the operation, making a child very ill.
- (c) Inflammatory swelling of the glands under the arm.
- (d) The transmission of other diseases.

Directions for treatment after vaccination :—

Take particular care that the arm be not rubbed, and that there be nothing tight about it.

Leave the vesicles to dry into scabs, and the scabs to fall off themselves. Do not poultice.

Remember that the arm will naturally become red and inflamed by the end of the eighth and on the ninth and tenth days after vaccination.

Should it become very much inflamed, paint the whole surface of the vesicles and arm with steel drops.

REGULATIONS CONCERNING THE ISSUE OF DRUGS.

Medicines in bulk not exceeding in value Rs. 5 will be issued at the outdoor Dispensary at prime cost, but only those mentioned in Appendices A. & B.

Superintendents are urged to use the Estate Order Memo.; Books of which can be obtained free of charge from the Hospital.

The cost of these medicines will be recovered from the Estate by the Government Agent, as in the case of the ordinary Hospital bill.

Medicines in bulk exceeding Rs. 5 in value may be obtained on requisition from the Civil Medical Stores, Colombo. The requisition should be sent in to the P. C. M. O., Colombo. A memo. of cost will be forwarded with the drugs and the recipient should at once remit a crossed cheque *not negotiable* and payable to the P. C. M. O. for the amount; when this rule is violated the drugs will afterwards only be forwarded for cash.

Superintendents should give full directions as to how the drugs are to be forwarded and carriage must be paid by them. The following certificate should accompany the order:—"I hereby certify that the above medicines are required for the use of the labourers of this estate."

Prescriptions compounded at the Dispensary for the use of Estate labourers, are supplied free, no matter in what quantities such mixtures are required.

Prescriptions ordered for Proprietors, Superintendents, or Assistant Superintendents, &c., may be compounded and issued for cash at the following rates, but only when such patients have no opportunity of having them dispensed elsewhere:—

Mixture and draughts, per oz. ..	cts. 5	|	Ointment, per oz. ...	cts. 10
Lotions, injections, and gargles	,, 2		Liniments, per oz. ...	,, 10
Pills and Powders, each ...	,, 2		Blisters, per sq. in. ...	,, 2

Prescriptions for others than the above can be compounded at the Dispensary under the following restrictions:—

(a) That prescriptions are to state the patient's name and address, are to be written by a medical practitioner, and are to be in English (except the names of drugs), without abbreviations or symbols.

(b) That no medicine be ordered that is not in the British Pharmacopœia.

(c) That the writer certify on the back of the prescription that it is required urgently for a serious case.

(d) That these prescriptions are paid for at the rates quoted above.

(e) That no responsibility attaches to Government in the compounding of these prescriptions.

LIST OF MEDICINES IN BULK.

(APPENDIX A.)

NAME OF DRUGS.	Rs. Ct.	NAME OF DRUGS.	Rs. Ct.
Alum .. per oz.	0 02	Peppermint Oil ...	per oz. 1 20
Arsenic Solution (Fowler's) ..	0 04	Paregoric Elixir ...	" 0 06
Boric acid ...	" 0 05	Rhubarb Powder ..	" 0 30
Bicarbonate of Potash ..	0 03	Sulphuric Acid, Diluted	" 0 02
" Soda ...	" 0 03	Soap Liniment ...	" 0 06
Carbolic Acid ...	" 0 09	Sulphate of Quinine ...	" 1 60
Calamine Ointment ...	" 0 08	Santonine ...	" 0 60
Cholera Mixture with Opium ..	0 04	Sweet Spirits of Nitre	" 0 06
Chlorodyne (Collis Brown's) ..	2 60	Sulphur ...	" 0 02
(C. M. Store) ..	" 0 20	Steel Drops ...	" 0 06
Calomel ...	" 0 22	Sulphur Ointment ...	" 0 08
Castor Oil ...	" 0 05	Sulphate of Zinc ...	" 0 02
Condys Fluid ..	" 0 04	Turpentine ...	per lb. 0 42
Cream of Tartar ...	" 0 06	Tincture of Iodine ...	per oz. 0 11
Dover's Powder ...	" 0 33	" Ginger ...	" 0 06
Epsom Salts ... per lb.	0 06	Liquid Extract of Ergot	" 0 23
Ipecacuanha Wine ... per oz.	0 17	Lint ...	" 0 12
" Powder... ..	" 0 64	James's Powder ...	" 1 20
Jalap ...	" 0 15	Mc Dougall's Disinfecting	
Laudanum ..	" 0 15	Carbolic Acid ... per lb.	0 54

(APPENDIX B.)

Blue Stone Lotion.	No. 64 Rheumatic Mixture.
No. 1 Eye Lotion (Zinc or Alum).	" 75 Tonic Mixture,
" 11 Carbolic Acid Lotion.	Fever Mixture.
" 26 Alum Gargle.	No. 106 Astringent Powders,
" 40 Black Wash.	" 107 Astringent Powders for
" 12 Carbolic Oil.	Children.
Cinchona Bark Mixture.	" 113 Purgative Powders.
No. 49 Astringent Mixture.	" 95 A-stringent Pills.
Cough Mixture.	Fever Powders.

RULES FOR ESTATE DISPENSARIES.

1. The Dispensary is established solely for the use of the labourers employed on the group of Estates which maintain it.

2. A list of the drugs which will be supplied free to the Dispensary by Government, on approved requisitions, can be obtained from the P. C. M. O.

3. The Dispenser will prepare requisitions twice a year, on forms supplied to him for the purpose, in terms of departmental order No. 32 of October 20, 1892. He shall submit the requisition for the approval of the Estate Superintendent, and then forward it to the P. C. M. O., Colombo.

4. Should drugs be required in the interval, intermediate requisitions, approved by the Estate Superintendent, should be forwarded in the same way in forms supplied for the purpose.

RULES FOR ESTATE DISPENSARIES.—(Contd.)

5. Stationery, instruments, appliances, and equipment are not supplied by Government.

6. The Dispenser shall be appointed by, and be under the supervision of the Superintendents of the Estates who will also pay his salary, but his appointment, continued employment, leave of absence, and appointment of a temporary substitute will be subject to the approval of the P. C. M. O. It is to be clearly understood that an Estate Dispensary and its Dispenser form no part of the Civil Medical Department or of Government service, and that no pension rights are attached to the office.

7. The Dispenser shall collect from the Superintendent, and forward to the District Medical Officer of the Station, all reports of births and deaths on the Estates under his charge, immediately after they occur.

8. He shall request the Superintendents of the Estates to send for the Medical Officer of the District to see any serious case or cases for which he may require a higher opinion, or in which removal to the hospital might be injurious to the patients, and he shall always do so in all cases of prolonged midwifery.

9. He shall bring to the notice of the Superintendents any condition of the lines or their surroundings likely to injuriously affect the occupants, and suggest the best means of removing them.

10. Rules for his guidance, as to hours of attending the Dispensary and visiting lines on the Estate, will be drawn up by the Superintendent.

11. The following returns must be made by the Dispenser to the P. C. M. O. to whom he is to apply for the necessary forms:—

- (1) Half-yearly requisition for drugs, as per paragraph 3 above.
- (2) Intermediate requisition forms.
- (3) Form 117 (monthly).

12. It is to be clearly understood that the drugs supplied to the Estate Dispensary are exclusively for the use of Estate labourers, and must not be put to any other use whatever, and that the supply will cease when an Estate no longer maintains a Dispenser. The drugs required for others than Estate labourers are to be procured as provided for in the Estate regulations, from the District Government Hospital or Dispensary.

13. Prescriptions of the Estate Dispenser for those mentioned in Estate regulations, will be dispensed at the Government Dispensary or Hospital of the station at the usual charges.

USEFUL DRUGS FOR ESTATE USE.

- The following medicines will be found useful; besides those generally kept on the estate, only a few of them are obtainable from the dispensary:—
- Iodoform.**—Used as a local application to wounds and ulcers either as a powder plain or mixed with an equal quantity of Boracic acid.
- Borax.**—3 drams in 8 ounces of water makes a useful gargle for a bad throat—a little honey may be added to it to make the gargle less disagreeable.
- Liq: Hydrargyri Perchloride.**—(Solution of perchloride of mercury) a wine glassful of the solution in a half tumbler of water is useful for washing wounds and ulcers.
- Potash Chlorate.**—½ oz : in 6 ounces of water makes an efficient gargle for bad throats.
- Liquor of Subacetate of lead.**—3 teaspoonfuls of the liquor in a pint bottle of water is useful in contusions and sprains and a couple of teaspoonfuls of laudanum may be advantageously added to the lotion to reduce pain.
- Tincture of Arnica.**—A teaspoonful in half a wine glass of water is a good lotion for sprains and contusions.
- Glycerine.**—A pinch of cocaine in a teaspoonful of glycerine and laudanum is efficacious in earache.
- Rectified Spirits**—Improves the action of lead or arnica lotions added in the proportion of 3 or 4 teaspoonfuls to the pint.
- Podophyllin pills.**—Obtainable at the Government dispensaries—1 or 2 at bed time followed by a dose of seidlitz powder in the morning if necessary.
- Chloride of Ammonium.**—Useful in making a cooling lotion for fever, headaches or contusions.
- Acetic Acid.**—Same as Chloride of Ammonium.
- Permanganate of potash.**—Useful as a disinfectant or deodorant.
- Phenacetin.**—5 grains with 3 grains of caffeine is useful to relieve headache or neuralgic pains.
- Cocaine.**—Vide under “Prescriptions.”
- Creosote.**—Vide under “Prescriptions.”
- Acid Boric.**—See Iodoform.
- Sulphate of Zinc.**—Vide under “Prescriptions.”
- Calomel.**—Vide “To make black wash.”
- Liquid extract of Ergot.**—Vide under “Prescriptions.”
- Bromide of Potassium.**—Dose 5 to 30 grains.
- Iodide of Potassium.**—Dose 5 to 30 grains.

 USEFUL DRUGS FOR ESTATE USE.—(Contd.)

Hazeline.—A patent drug useful in bleeding from lungs or stomach, dose half to a teaspoonful every fourth hour.

Sal volatile.— $\frac{1}{2}$ teaspoonful in water is useful in sick stomach and as a stimulant.

Antipyrine.—Similar in action and dose to Phenacetin, q. v.

Bismuth subnitrate.—Dose for children 2 to 5 grains; for adults 5 to 15 grains in diarrhoea and dysentery.

Chloral.—Dose 5 to 30 grains; a draught of 10 grains of Chloral and 10 grains of Bromide of Potassium in a wine glassful of water in cases of sleeplessness.

Caffeine. Dose 1 to 5 grains; see Phenacetin.

 A FEW PRESCRIPTIONS,

For Sore-Eyes.—Collyrium of Sulphate of Zinc 2 grains, in 1 ounce of water. Or Acid Boric 2 grains, in 1 ounce of water.

Lotion for Sprains & Bruises.—Tincture of Arnica 1 dram, water 1 ounce.—Or Liquor of Subacetate of lead 4 drams, Laudanum 2 drams. Rectified Spirits half ounce, water 8 ounces.

To make Black wash.—Calomel 30 grains, Lime water 10 ounces.

Carbolic Lotion.—Carbolic acid 1 ounce, water 2 pints.

Carbolic oil.—Carbolic acid $\frac{1}{2}$ to 1 dram, Olive oil 12 $\frac{1}{2}$ to 19 drams.

Cooling Lotion for Fever Headaches.—Chloride of Ammonium $\frac{1}{2}$ ounce, Nitre $\frac{1}{2}$ ounce, Rectified Spirits 1 ounce, Acetic acid dilute 1 $\frac{1}{2}$ ounces, water 5 $\frac{1}{2}$ ounces.

For Toothache.—A solution of 3 grains of Cocaine in 30 drops Creosote put in the hollow of the tooth.

For Earache.—3 grains of Cocaine in a small teaspoonful of Glycerine and Laudanum dropped into the ear.

For Headache and Neuralgic pains—Phenacetin 5 grains with or without 3 grains of Caffeine—Caffeine counteracts the depressing effect of Phenacetin.

For Child Birth.—A teaspoonful of Liquid extract of Ergot, in a wine glassful of water, to be given immediately after birth.

To make Lime water.—A pound unslaked lime. A pint and half of water. Pour in the water slowly and keep stirring, leave for a few hours and pour off without the sediment. Keep well corked.

A FEW PRESCRIPTIONS.—(Contd.)

For Worms.—Santonine powder for 3 evenings and Castor oil on the next morning. Dose for adult 5 grains.

For Burns.—Zinc ointment or bread poultices may be applied if there are no blisters. If there are blisters, prick them, apply lime water and cover up with cotton wool.

For Snake Bites.—Have no fear about cutting out the bite, lift the skin and cut out the marks of *both* fangs. Patient should be kept moving about, and plenty of stimulants given.

USEFUL NOTES FOR THE TREATMENT OF ESTATE LABOURERS.

Dysentery.—Which accounts for nearly 90 per cent. of all deaths on estates is, like cholera, endemic in some districts of India. It is very contagious owing to particles of dried faecal matter being blown into drinking water &c., where the lines are not kept in as sanitary a state as they should be. When children are suffering from dysentery they should be especially well looked after and not allowed to dirty the lines and their precincts. As a cooly very seldom reports his illness in the first stage and as the disease is slow in its progress it is possible for the patient to be working up to within 8 or 10 days of his death. Before the disease becomes chronic it is easily amenable to treatment but after that, it may run a course of a year or two.

Treatment.—For the initial stage, give an adult a wine glassful of castor oil and twenty drops of laudanum and the next day give dysentery powders from the dispensary.

Diet.—Rice Congi; on no account must the patient be allowed curry and rice for which he will ask, but after a fortnight or so he will be able to gradually resume his ordinary diet.

In chronic dysentery nothing but the most persevering treatment will be of avail; swelling of the feet and body and inflammation of the eyes are the worst signs of dysentery.

Anchylostomiasis.—A disease almost peculiar to the Malabar cooly. It is caused by the presence of small worms in the bowels of the calibre of a human hair varying in length from half to one inch. All cases can be cured if treated in time—Repeated doses of castor oil and an Iron mixture as below will be good but suitable cases should be sent to the hospital for treatment.

Iron Mixture.—Steel drops two teaspoonfuls, Quinine one teaspoonful, Water one pint. (*i. e.* half a large bottle.)

USEFUL NOTES FOR THE TREATMENT OF ESTATE LABOURERS,—(Contd.)

Dose for adults.—Half a wine glassful— three times a day.

The above mixture is useful in all cases where a cooly looks pale, complains of being easily fatigued or of shortness of breath.

Worms.—This disease is common to almost all but more especially to children over one year old. Castor oil and Santonine should be given if the patient complains of griping pains in the stomach. A wine glassful of castor oil (small doses are ineffective in cooly cases) with as much santonine as will moderately cover a ten cent piece can be given to adults who are not debilitated. For children from ten to fifteen years half the foregoing dose and from three to ten years a quarter of the dose should be given. For a child of one year a table-spoonful of Castor oil and not more Santonine than can be put on the point of a pen-knife.

Santonine and Castor oil are *best given together* but another way is to give Santonine and Rhubarb for three to six evenings and a sufficiently large dose of Castor oil at the end.

Malarial Fever.—Hot drinks like tea, congii, and Coriander water can be given in the acute stage. Quinine is best given when the fever has subsided, large doses are necessary, as much as can be well piled on a rupee can be taken by an adult and proportionate doses by children. The Quinine treatment should be continued for some days after the fever has left.

Ulcers.—These are very common and should not be neglected or allowed to fester. Boric ointment, Boracic acid powder and Zinc ointment are all good antiseptic dressings. If the ulcer grows above the level of the skin it should be touched with Copper Sulphate (Blue Stone.) The patient should lie up to ensure a speedy cure. Most ulcers if kept clean and aseptic can be treated on the estate. If an ulcer is quite clean it will have almost no odour,

Itch.—Personal cleanliness is essential to cure itch and prevent its recurrence. Frequent ablutions with plenty of carbolic soap and the application of sulphur ointment are the best remedies.

Bronchitis-Pneumonia and sore throats are common during the monsoon—Pneumonia can be generally diagnosed at the beginning by continued fever, cough, pains in the chest, an anxious countenance and hurried breathing. Early and effective treatment is necessary but cases should not be moved any distance to the hospital without medical advice. Warm clothing, simple nutritious diet and the application of a mustard plaster are perhaps all that need be done before the doctor arrives.

USEFUL NOTES FOR THE TREATMENT OF ESTATE LABOURERS.—(Contd.)

Acute Diarrhoea.—Generally caused by eating unripe fruit or badly cooked vegetables, rotten meat &c., &c. Signs are frequent watery stools, vomiting, cramp in the legs, thirst and restlessness. As the disease is dangerous prompt measures should be taken.

Treatment.—Before the Medical Officer arrives Chlorodyne 10 drops in water, Laudanum 25 drops in water or two table spoonfuls of the cholera mixture (Government Dispensary) may be given every two hours according to the urgency of the case.

A mustard plaster should be applied to the nape of the neck, stomach and legs and hot applications to the hands and feet.

Consumption.—Can be generally diagnosed from a cough of some duration the patient getting thin and in the later stages spitting blood and being subject to night sweats.

The treatment takes a long time and in most cases it is better to send the cooly to the coast where the climate is not so variable.

Measles.—This disease is known by the presence of fever, a rash about the size of pin heads in the shape of crescents forming on the body, cough and watering of the eyes &c.

Treatment.—The disease is harmless in this climate, chills should be prevented, cough mixture and Boric Lotion to the eyes are needed in some cases. Strong purgatives should be avoided.

Chicken Pox.—Is preceded by continued fever, aching in the back, loins and joints, and eruptions like small blisters about the size of a coriander seed, especially the face, back, chest and arms.

Treatment.—Congi diet during the fever stage, some carbolic vaseline may be rubbed to ease the itching and to lessen the spread of the disease. It is quite harmless in this country.

Small Pox.—Much the same symptoms as Chicken Pox but more severe. The eruptions are more numerous and become pitted in the centre. Vomiting can also be expected.

NOTE.—All cases of infectious diseases should be notified to the D. M. O. in order that proper precautions may be advised and in the case of Small Pox the patient should be isolated immediately

NOTE.—For epidemics, such as Influenza, which occur during the monsoon season special medicines can be obtained from the Government Dispensaries *Free of cost.*

Regulations Regarding the Admission of Patients to the Planters' Ward, General Hospital, Colombo.

1. Applications for admission into the Planters' Ward must be made either in person or by letter to the Physician in charge with a short statement why admission is requested into these wards.

2. These wards are for the use of males exclusively.

3. Planters are admitted on personal guarantee, provided the Physician in charge considers the guarantee satisfactory.

4. No name shall be entered on the registers of the Wards until these preliminaries are complied with.

5. Urgent cases are admitted at once, and preliminaries will be attended to subsequent to admission.

NOTE.—The scale of charges is Rs. 10 Entrance Fee and Rs. 3 per day cost of subsistence.

RULES UNDER THE BIRTHS AND DEATHS REGISTRATION ORDINANCE.

1. Application for the necessary forms and books of reports should be made to the Provincial Registrar or Assistant Provincial Registrar of the District.

2. The reports must be neatly and correctly written in a legible manner and in black ink. Names especially must be written very clearly so that they may not be mistaken for other similar names.

3. Every particular required in the form of Report must be written in full.

4. Nothing except the particulars required by the heading of each column of the printed form should be written in the column. Care should be taken that the particulars belonging to one column do not extend into the adjoining column or into the margin of the form.

5. In reporting deaths the true cause of death must be carefully ascertained and inserted.

6. If it appears to the Superintendent that the deceased committed suicide, or was killed by another, or by an animal, or by an accident, or has died suddenly and under suspicious circumstances, the Superintendent must report the cases to the Police Magistrate or Inquirer into Deaths having jurisdiction over the place where the death occurred, if no inquest has already been held.

RULES UNDER THE BIRTHS AND DEATHS
REGISTRATION ORDINANCE,—(*Contd.*)

7. Still-births need not be reported except in places proclaimed under section 31 of Ordinance 1 of 1895 but if a child is born and dies immediately or soon after the birth, both the birth and the death must be separately reported.

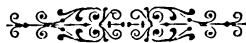
8. The word "Married" in the heading "Were Parents Married" in the report of birth means :—

(a) In the case of Indian coolies, that they were married according to the rites and customs of their respective communities in India.

(b) In the case of Kandyan Singhalese, that their marriage was registered under Ordinance 3 of 1870.

(c) In the case of other natives of Ceylon, that their marriage was registered or solemnized according to the rites and customs of their respective communities, and the parties lived together as, and were generally reported to be husband and wife. [NOTE.—By a later regulation it is necessary, in the case of entering the parents in a birth report as *not married*, to have their signatures opposite their respective names, and if they can only make their marks the same should be attested by the Superintendent.]

9. For the purpose of this Ordinance the word "Month" should be taken to mean a calendar month.



NOTES.

LEGAL HINTS.

LEGAL HINTS,

(Extracts from the Ceylon Procedure Code.)

Sudden Deaths.—(C. P. C. Sec., 21). Every person aware of any sudden or unnatural death or death by violence or of any death under suspicious circumstances or of the body of any person being found dead without it being known how such person came by death; shall in the absence of reasonable excuse—the burden of proving which shall lie upon the person so aware—forthwith give information to the nearest police court or to the officer in charge of the nearest police station or to a peace officer or the headman of the nearest village of such commission or intention or of such sudden unnatural or violent death or death under suspicious circumstances or of the finding of such dead body.

Warrants.—(C. P. C. Sec., 19). Every person is bound to assist a police magistrate or a peace officer reasonably demanding his aid in the taking of any other person whom such magistrate or peace officer is authorized to arrest. (C. P. C. Sec., 55). A warrant of arrest may be executed at any place in this island.

Detention.—(C. P. C. Sec., 37). No peace officer shall detain in custody a person arrested without a warrant for a longer period than under all the circumstances of the case is reasonable, and such period shall not exceed twenty-four hours exclusive of the time necessary for the journey from the place of arrest to the police magistrate.

Summons.—(C. P. C. Sec., 44). This must be in the language of the person summoned, unless he is believed to be able to read English.

Powers of Inquirers.—(C. P. C. Sec., 123). An inquirer can compel the attendance of persons able to give information.

(C. P. C. Sec., 124). An inquirer cannot administer any oath or affirmation.

Witnesses and Jurors.—(C. P. C. Sec., 257). The qualification for an English speaking juror is any one who can speak, read and write the English language and each of whom possesses in his own or his wife's right an income of not less than Rs. 1,000 a year or is in the enjoyment of a monthly salary of not less than Rs. 100.

(Minute by the Governor, dated 4th February, 1901.)

Superintendents of estates when attending the Supreme Court as witnesses from a distance of more than 10 miles, are entitled to payment of batta at Rs. 4/50 per diem and travelling expenses at cts. 75 a mile. Where there are public conveyances by land or sea the fare and batta only can be drawn.

In calculating batta payable to complainants and witnesses who are

LEGAL HINTS.—(Contd.)

not entitled to mileage, one day's batta shall be allowed for every ten miles fully completed and travelled; provided the journey is not performed by public conveyance or otherwise paid for.

All Europeans and native planters, proprietors, and superintendents of estates of not less than 150 acres in extent in cultivation, residing more than ten miles from the Sessions town, shall be entitled to a special rate of Rs. 7/50 per day when serving as jurors.

No batta is payable either to Witnesses or jurors for days on which mileage is drawn.

(C. P. C. Sec., 266), Unless it be unavoidable not more than one person belonging to or employed in any mercantile or business establishment or on any plantation or estate shall be included in the same panel.

(C. P. C. Sec., 270), Every person shall be served at least ten days before the first day of the sessions, *unless one of the judges of the Supreme Court shall have directed service.* (Vide Sec. 273).

(C. P. C. Sec., 275), No juror shall be compellable to serve more than a fortnight in any one sessions unless at the expiration of the fortnight a trial in which he is engaged as a juror is pending and then only until the end of such trial.

(C. P. C. Sec., 278), Application to be excused from attendance should be made in writing to the Registrar, stating the grounds on which the application is made.

Unofficial Police Magistrates.—European inquirers into death are entitled to a fee of Rs. 10 for every inquest held and a further sum of 50 cts. per mile when the distance travelled either way exceeds 5 miles.

In cases in which no inquest is actually held, but an inquiry is made, a fee of Rs. 5 will be allowed.

Batta at the rate of Rs. 7/50 will be granted for each night the inquirer is necessarily detained from home when on inquest duty. The claim in all instances shall be supported by a certificate on honour that the detention was actually necessary.

Bolters.—*Unofficial Police Magistrates cannot issue warrants for run away coolies.* Plaint forms can be obtained from every police court free of charge. See page 257.

Police and Headmen.—Persons within the police limits of a town and residents on estates which pay police tax, are alone entitled to the services of the police. Beyond police limits the local headmen should be applied to.

LEGAL HINTS.—(Contd.)

ORDINANCES.

The following are the names and prices of the Ordinances which may be found useful. They should be applied for to the Government Record-keeper, at the Colonial Secretary's Office, Colombo, and should be accompanied by payment in advance.

Payment should be made by Post Office Order, Government Draft, or Cheque on a Colombo Bank. Stamps will not be accepted in payment.

	cents.
Branch Roads, 14 of 1896	10
Domestic Servants, Registration of 28 of 1871 ...	5
Export Duty on Tea, 4 of 1894	5
Fertilizers Ordinance, 12 of 1901	5
Indian Coolies employed on Estates $\left\{ \begin{array}{l} 11 \text{ of } 1865 \\ 13 \text{ of } 1889 \\ 7 \text{ of } 1890 \end{array} \right\}$...	15
Insect Pest and Quarantine Ordinance, 5 of 1901 ...	5
Inventors, Exclusive privileges to, 16 of 1892, & 6 of 1897	20
Land Registration, 5 of 1877, 4 of 1889, and 14 of 1891 ...	40
Law of Evidence, 14 of 1895	60
Medical Wants of Planting Districts, 17 of 1880 and 9 of 1892	15
Mines and Machinery, 2 of 1896	5
Oaths and Affirmations. 9 of 1895	5
Praedial Produce, Whipping for Theft of 4 of 1891 ...	5
Registration of Births and Deaths, 1 of 1895 and 23 of 1900	25
Registration of Marriages, (General) 2 of 1895, and 19 of 1900	25
Registration of Deeds, 6 of 1866, and 15 of 1867 ...	10
The Road Ordinance 1861, also 31 of 1884, and 10 of 1900	30
Treasure Trove. 17 of 1887	5
Trespass of Cattle, 9 of 1876	5
Vaccination, 20 of 1886	5
Waste, Forest, Chena, and unoccupied lands, $\left\{ \begin{array}{l} 1 \text{ of } 1897 \\ 1 \text{ of } 1899 \\ 5 \text{ of } 1900 \end{array} \right\}$	20
Wills and Testamentary dispositions, 21 of 1844, and 7 of 1871	15

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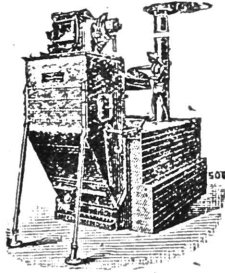
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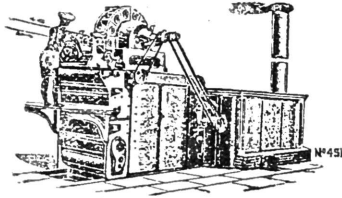
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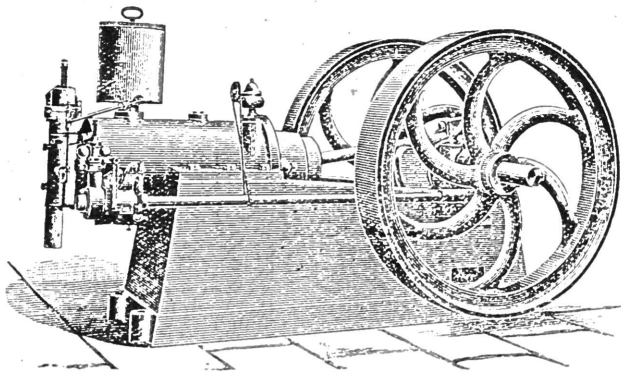
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10½	138	18	9	8	17	0	147	15	9	40
13	152	16	8	10	5	0	163	1	8	45
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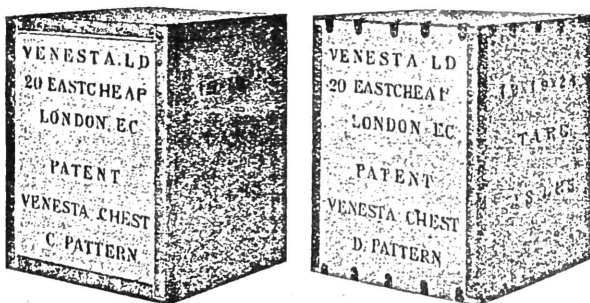
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(See Diagrams on following Pages.)

The shooks for the bodies of these boxes are fixed together by means of metal strips and rivets.

Figure 1 illustrates the way in which the sides are joined together by metal strips. Two shooks are placed along-side each other on a flat wooden table, and iron rods, which are called gauges, are slipped between each as indicated in the diagram. The metal strips are then rivetted in the position shown. When the first two shooks have been rivetted together, the third is rivetted to the second, and so on. The shooks should be firmly pressed against the gauges whilst being rivetted together. The outside strip A is bent at a right angle before it is fixed to the box. It is provided bent by the suppliers. The following is the method of driving the rivets used to fix the metal strips:—(The rivets are to be put into the strips two inches apart or at intervals that will be found marked upon them, the end rivets are to be two and a half inches from each end of the strip, as the ends will be secured by nails, as described later on.)

Directions for Driving and Clenching Rivets by Hand.

Insert a rivet in the hand tool, as shown in **Figure 1A**, drive the rivet through the metal and into the Venesta, which should rest on an iron bar or slab let into the table. Withdraw the holder when it touches the wood, and drive the rivet home with the hammer. The prongs of the rivet will clench when they come in contact with the iron plate beneath the Venesta. **They must be driven well home.**

The four sides which are now joined together are reversed.

The Venesta metal, which is cut to the proper size, is then placed over the shooks. It will be found that allowance is made for an overlap on all sides as shown by the diagonal shading in **Figure 2**. When the Venesta metal is in position the battens are secured upon it with two nails to each batten of sufficient length to go through the batten and the shook, and to project so as to allow of being clenched underneath. The batten is fixed flush LENGTHWISE with the edge of the shook, one END of the batten is also fixed flush with the shook, which

will leave a space of $\frac{3}{16}$ -in. between the other end of the batten and the shook as shown in the diagram. All the battens are fixed in the same way.

Figure 3.—The four shooks with the Venesta metal are then bent up into shape, beginning with the end to which the right angled metal piece has not been attached.

The four side shooks for a chest 19in. square measure $18\frac{3}{16}$ in. in width, and to make the chest 19 by 19in. outside measurement it is necessary, as shown in **Figure 3A**, that each shook should go outside at one edge and inside at the other edge. The same plan is followed with chests of other dimensions. Side No. 1 is now rivetted on to side No. 4. A horn, as shown in **Figure No. 5**, is required for this purpose with an anvil along the edge of it measuring $\frac{3}{4}$ in. in height, and

FOR CHESTS 20 X 20 X 24 ...	21in. in length.
19 X 19 X 24 ...	21in. „
19 X 19 X 22 ...	19in. „
16 X 16 X 20 ...	17in. „

Anvils are supplied free of charge with first shipments, and can be obtained from the Colombo and Calcutta Agents.

This rivetting will not hurt the Venesta metal, and it is most important that it should be thoroughly done.

The overlaps of Venesta metal which join here are folded with a double fold against the corner of the box; or if preferred can be soldered down so as to cover the rivets; Venesta metal will solder without solder.

Figure 4 represents the box as it should now appear, the top and bottom overlaps of Venesta metal projecting as shown. Sheets of Venesta metal, 20 $\frac{1}{2}$ in. by 20 $\frac{1}{2}$ in., are provided for the bottom (for chests 19in. square). These must be put over the bottom of the chests and their edges folded all round into the overlap of the body lining, as shown in **Figures 4A, 4B, 4C**. The bottom shook is then laid on and the bent metal edging is fixed first from the top by driving the hooks supplied so as to embrace the folded edge A (See **Figures 6 and 6A**). Five hooks being used on each side. The hooks are driven through the metal and Venesta into the battens beneath. When each of the four edges have been fixed in this manner, each of the metal edges is secured to the side of the chest by driving nine 1in. wire nails through the metal just above the fold B and two 1in. wire nails through the ends of the upright corner metals, $\frac{3}{4}$ in. from the end (See **Figure 6**). The nails pass through the metal and the Venesta into the lower part of the batten as shown at **Figure 6A**. The nails in the corner metals should pass into the centre of the battens. The chests are opened by withdrawing the staples and bending back the metal edges as shown in **Figure 6B**.

The chest is now ready to receive its tea; when the tea is packed the top Venesta metal and lid are put on precisely as were the bottom.

Figure 7 shows the appearance of the box in Pattern C when it has been made up.

Figure 8 shows the appearance of the box in Pattern D, which is a somewhat cheaper pattern of box.

Venesta, Ltd., Eastcheap, London.

AGENTS:

WILLIAMSON, MAGOR & Co., Calcutta.

COLOMBO COMMERCIAL Co., Ltd., Colombo.

Continuation of Diagrams. Patent Venesta Tea Chests.

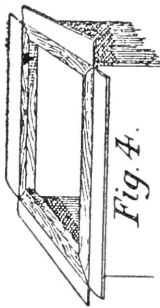


Fig. 4.



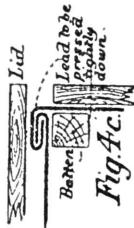
Top or bottom sheet of lead,
Batten
Thin
sheet
of
lead



Fig. 3a.



Batten
Fig. 4b.



Lid
Batten
Thin
sheet
of
lead
Lead to be
pressed
tightly
down.

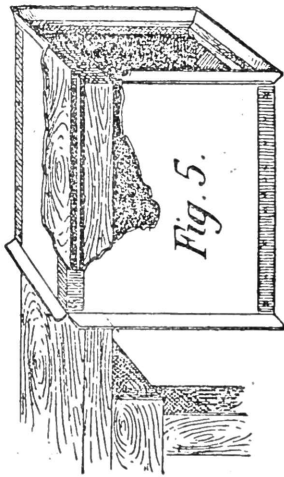


Fig. 5.

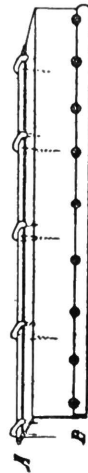


Fig. 6.

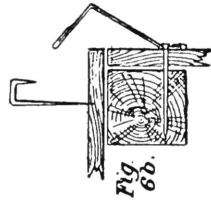


Fig. 6b.

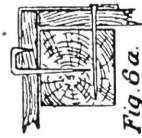


Fig. 6a.

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AT MOST MODERATE PRICES.

Mineral Waters of the Finest Quality.

PRICE LISTS ON APPLICATION.

C. S. WRIGHT,
MANAGER.

The Turkish Tobacco Co.

4, VICTORIA ARCADE, COLOMBO.

(Opposite) THE GRAND ORIENTAL HOTEL.

The best place in Colombo to obtain really first class Cigars and Cigarettes, Pipe and Cigarette Tobaccos, and all sorts of Smoker's requisites.

The following is always in stock:—

MANILA CIGARS.—Reina Victoria, Londres, Brevas Damas, Cortado Fino, La Perla, Cortado Delicioso, Imperiales, High Life in the East, &c., &c., all from the famous La Perla del Oriente Factory.

CONTINENTALS.—Bouquet de Salon (straw covered), Bismark, Lanka

INDIAN.—Spencer's Torpedo, Beaconsfield, &c., also Coconada Burmah, Brazilian, Cuban, Sumatran Cigars.

CIGARETTES.—Wills' Three Castles, Capstan, Gold Flake, (Melachrino, Vafiades, Nestor Egyptian Cigarettes.)

TOBACCO.—Capstan, Three Castles, Pioneer, Birdseye, Plug Cut, Craven Mixture, Glasgow Mixture, Richmond Mixture, Virginian, &c., &c.

N. B.—Egyptian and Turkish Cigarettes manufactured daily in large quantities at our Factory—from fresh imported leaf tobacco from Constantinople.

Brown & Davidson,

ENGINEERS,

TALAWAKELE.

Colombo Office:—Australia Buildings.

Agents for the “CUNDALL” Patent Oil Engine, the most popular Oil Engine on the Market; can be worked with Liquid Fuel, Crude, or Bulk Oil.

Agents for Gilbert Gilkes & Co.’s well-known Turbines & Pelton Wheels.

Agents for “The Sun” Fan. Highest efficiency, lightness & strength.

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Agents for Braby’s “Eclipse” corrugated Skylights.

Agents for the new “Kitson” patent Light.

Agents for “Scandinavia” Belting.

BROWN & DAVIDSON’S improved Breast Roll Breakers, and made Tea Sifters have proved their value, and are very largely used.

Large stocks of Factory Building Materials always on hand.

Factory Construction a Speciality.

Estate Tools and Requisites.

For Prices see our Monthly Circular.

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Established 1860.

H. Don Carolis & Sons,

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Complete House Furnishers.

PROPRIETORS
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The Largest Furniture Warehouse in Asia

Departments:—

Furniture, Upholstery, General
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Artistic Furniture

Made of very Rare Wood found only in Ceylon.

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Equal to the best workmanship in Europe and America.

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Cheapest and Best House in
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*Sulphur—Roll and Pulverised. Alum—
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OILS.—CASTOR, GINGELLY AND MARGOSA. - -
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Special quotations for quantities.

QUALITY GUARANTEED TO BE EQUAL TO ANY
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Samples Free.

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*Undertakes all Auction Sales, Inventories,
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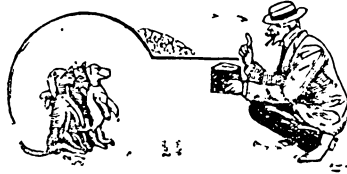
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Kandy.



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MR. F. SKEEN having taken over the Photographic business of the late Mr. W. L. H. SKEEN is prepared to visit Estates throughout the island for the purpose of undertaking any kind of Photographic work. MR. SKEEN'S long experience in Ceylon (9 years,) and in Burma (15 years,) justifies the assertion that his work will be found thoroughly satisfactory.

All Charges will be Found Most Moderate.

Quotations Furnished,

BROMIDE ENLARGEMENTS.

We have had great success in this branch and have always a number of orders on hand. Those who possess photographs of relatives or friends and wish to preserve them, cannot do better than order one of our permanent Bromide Enlargements Size 12 by 9, mounted 18 by 14 Price Rs. 10-00.

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A choice selection of Photogravures, Engravings, etc., always on hand and a large variety of Picture Mouldings to select from. Pictures framed tastefully and protected from damp, etc.

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Grevillea Robusta, (*Silver Oak.*)

SEED FROM
OLD MATURED TREES.

Accacia Melonxylon, Accacia De-
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OTHER SEEDS SUITABLE
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High-Class Mechanical and Surgical Dental Work in all
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THE only best-equipped Dental Parlours in the
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*Previous engagements are earnestly requested
to save disappointment.*

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EAST HOLYROOD,

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TEA SEED, FINEST HYBRID
GUM (IRON BARK) SEED AND PLANTS.
GREVILLEA, INDIAN, SEED AND PLANTS,

APPLY TO MANAGER.

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STRUCTURAL ENGINEERS,

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Prepare and Submit Free on Application

DESIGNS AND ESTIMATES FOR ALL KINDS OF

**Iron Buildings for Tea
Factories, etc., etc.**

WIRE ROPES FOR AERIAL TRAMWAYS, ETC.

INDIAN GARDENING AND PLANTING. - -

PUBLISHED WEEKLY.

THE LEADING PLANTING JOURNAL.

*UP-TO-DATE IN ALL THAT CONCERNS PLANTING
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CIRCULATES ALL OVER THE WORLD.

NO PLANTER SHOULD BE WITHOUT IT.

Publishes All That is New In

TEA, COFFEE, INDIGO, ECONOMIC PRODUCTS, AGRICULTURE, ENTOMOLOGY, ETC.

EVERY CEYLON PLANTER should take it in if he wishes to be well informed upon all that concerns his staple industry.

As an advertising medium it stands unique among Indian journals.

Specimen Copy free on Application to Manager.

SUBSCRIPTION: INDIA, BURMA and CEYLON, Rs. 16.00 annually, including postage. FOREIGN, £1.8.6 annually, including postage, PAYABLE IN ADVANCE.

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IS THE RETURN IT BRINGS.

AN APPARENTLY CHEAP RATE

is not everything : in fact it may prove
very **dear** in the long run.



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SECURE TO ADVERTISERS THE FOLLOWING:—

- The largest circulation amongst
- The best class of buyers;
- The brightest and best daily, and, consequently,
- The greatest number of interested readers;
- The clearest and most attractive display;
- The lowest prices for the value secured;
- The *only* effective medium between Colombo
and the Planting Districts;

AND

Three Times as many Planter subscribers as any
other paper.

When we are consulted about our prices we are able to show that our rates are MUCH lower than any others in Ceylon per capita of *readers possessing numerous wants and the money to provide them.*

The "Shell" Transport &
Trading Co., Ltd.

BULK PETROLEUM

THE CHEAPEST AND BEST OIL

FOR

ILLUMINATING AND MOTIVE PURPOSES.

LIQUID FUEL FOR _____



**MOTIVE POWER -
AND TEA DRYING.**

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AGENTS:

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Polgahawela, Kurunegala, New Pera-
deniya, Kandy, Matale, Gampola, Nawa-
lapitiya, Hatton, Nanuoya, Bandarawela,
Jaffna and Batticaloa.*

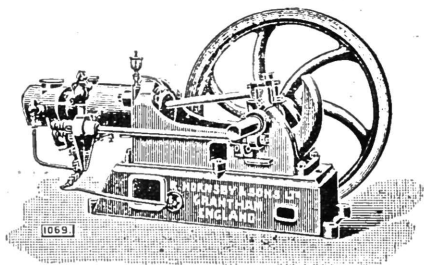
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Orders and Enquiries should be addressed to

"THE AGENT"

BULK PETROLEUM INSTALLATION

At the Various Depots.

THE Hornsby-Akroyd Oil Engine.



The Hornsby-Akroyd Oil Engine,

Will work equally well either with Liquid Fuel or with
Bulk Petroleum.

TESTIMONIAL.

Mes-srs. BROWN & Co., Ltd. Yuillefield Estate,
Hatton, Nov. 8th, 1902.

Dear Sirs,

Since 1st October last I have been working the Hornsby-Akroyd Oil Engine with LIQUID FUEL. The results have been most satisfactory. The only difference is that the Vapouriser, when using Liquid Fuel, requires cleaning oftener than when using Bulk Oil.

Yours faithfully,

(Signed) CHAS. E. SHUTTLEWORTH.

WHAT IT MEANS.

The above Engine is $9\frac{1}{2}$ B. H. P. and is used to drive the following Machinery in the Yuillefield Factory:—

ONE EXCELSIOR ROLLER, TWO BROWN'S PATENT
DESICCATORS, AND THE NECESSARY SHAFTING.

THE COMPARATIVE COST

for working the Yuillefield Machinery (1) Firewood in a good Steam Engine and Boiler; (2) Bulk Oil in an Oil Engine; and (3) Liquid Fuel in the Hornsby-Akroyd Oil Engine, are given underneath. The following are the actual costs of the various kinds of fuel, including delivery at the Factory.

Cost of Firewood **Rs. 3·20 per cubic yard.**

Cost of Bulk Oil **Rs. 0·46 per gallon.**

Cost of Liquid Fuel **Rs. 0·25 per gallon.**

COST OF RUNNING

Steam and Oil Engine on Yuillefield Estate.

Engine & Boiler, using ·375 cub. yd. per hour.....	R1·20 per hour	
Oil Engine, using ·70 gal. Bulk Oil per hour.....	R0·82	,,
Do using ·75 gal. Liquid Fuel p. hour.....	R0·18	,,

The Upkeep of a steam Engine and Boiler is much higher than that of an Oil Engine, (even without taking into consideration the heavy depreciation on the Boiler) and the cost of attendance for an Oil Engine is very much lower.

TO SUM UP.

If your Firewood for your Steam Engine is costing you even as low as R0·75 per cubic yard, it will pay you to put in a Hornsby-Akroyd Oil Engine and work with LIQUID FUEL.

We commend a perusal of the above figures to all users of Steam Engines burning Coal in Colombo, as well as to Planters. A saving of thousands of Rupees per annum may be effected by using Liquid Fuel in a Hornsby-Akroyd Oil Engine, paying for the cost of the Engine in a few years, and saving large sums in upkeep and attendance.

SOLE AGENTS FOR GEYLON.

Brown & Co., Ltd.

DICK'S PATENT BALATA BELTS.

UNSURPASSED FOR USE IN TEA FACTORIES.

UNAFFECTED BY HEAT, COLD OR
DAMP.

Combine drawing power and durability with smoothness of running. Highly recommended by all who have used them.

A HAPUTALE PLANTER SAYS:

"Your BALATA BELTING is out and away the best belting I have ever used."

1½ in. × 3 ply	Rs. 0.30 per ft.
2 " " 3 " "	" 0.48 "
2¼ " " 3 " "	" 0.45 "
2½ " " 3 " "	" 0.50 "
3 " " 4 " "	" 0.65 "
3½ " " 4 " "	" 0.85 "
4 " " 4 " "	" 1.00 "
4¼ " " 5 " "	" 1.15 "
4½ " " 4 " "	" 1.30 "
5 " " 5 " "	" 1.50 "
5½ " " 5 " "	" 1.70 "
6 " " 5 " "	" 1.90 "
7 " " 6 " "	" 2.50 "
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Special sizes can be Procured to Order.

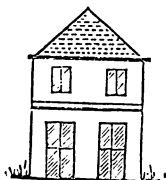
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THIS house is prepared to execute orders for House, Stores and Estate requirements, such as Rice, (Soolai) Paddy, Gram, Gingelly and Coconut Poonac, best Cement, English and country Solder, Block Tin, Wire Nails, Wrought Iron Nails, Bellows, Zinc Sheets, Soldering Iron, Buckets in sizes, Iron sheets, English Coal and Stockholm Tar. Castor Oil, Margosa Oil, Kerosene Oil, Machine, Cylinder and Lubricating Oil, best unslaked Coral Lime, Best Jute Hessian, 45 in. and 40 in., Bleached Canvas, American Drill, Gunnies, best steel Mamoties, Paint, Varnish, Fibres, Buffalo hide, best made Tarpaulins for Carts, Tea Boxes, &c. Leaf transport Coir Bags, Coir Yarn, English Empty Hogshead, Teak Bath Tubs &c., Cotton waste, Coast and Mysore Cumblies, country Tea Chests, Barbed Fence Wire, Tallow for Engine, Carts, &c., Cast iron, Borings, &c., also best seasoned Bungalow furniture, Cart, Bullocks and Milch Cows supplied

Highest price will be paid by us for Lead Cli; pings, old Brass &c.

As Auctioneers and Brokers, any goods entrusted to us for disposal or to purchase outright will receive our best attention, and clients may rely on the best prices being fetched, or given for any goods entrusted to us for purchase or sale by auction. Sale of Cocoa, Tea Dust, Copra, &c.

STATIONERY.—A LARGE SUPPLY ON HAND.

PRINTING OF EVERY DESCRIPTION UNDERTAKEN.

LIVE STOCK SUPPLIED.

Prompt attention will be given by us to the smallest order.

Quotations subject to fluctuation of the Market.

Terms Cash—or cheque to accompany orders, or an order, on any of the Fort Offices, for payment on production of Rail receipt, &c.

EVERY SATISFACTION GUARANTEED.

YOUR KIND PATRONAGE IS RESPECTFULLY
SOLICITED.

DEANE & RAE'S PATENT

GREEN TEA MACHINE.

WITH LATEST IMPROVEMENTS.

Practically all the Green Teas manufactured in Ceylon and India are made in this machine.

LARGE SIZE MACHINE. Capacity 225 lbs. at a fill.

Fitted for Hand **Rs. 600**

Fitted for Power **Rs. 700**

Packing for Rail **Rs. 12-50**

SMALL SIZE MACHINE. Capacity 100 lbs. at a fill.

Fitted for Hand **Rs. 450**

Fitted for Power **Rs. 550**

Packing for Rail **Rs. 10-00**

The above prices include all royalties. Full Instructions supplied with each Machine.

The saving of labour with the power machines very soon pays for the extra initial cost, so that they are daily getting more into favour.

The latest improvement we have effected is a reversing motion, by which the box can be rotated in opposite directions at will.

This motion, it has been found, steams the leaf more evenly than a continuous rotation in one direction.

We can fix this reversing motion to power machines for the extra sum of Rs. 60.00.

Sole Agents and Manufacturers

BROWN & CO., Limited,

Important Notice.

PAPER-HANGING.

M. J. Fernando, Paper-Hanger,

HAS GREAT EXPERIENCE IN THIS WORK.

**Has papered several Colombo,
Up-country and Out-station
Bungalows,**

GIVING GREAT SATISFACTION.

The leading Hotels in the Island have
also used his services.

SEVERAL SPLENDID TESTIMONIALS.

Prices Very Moderate.

ADDRESS:

Sarrikkemulle, Panadura.

BROWN & CO.'S

“PREMIER” TEA SIFTER.

This Machine has for many years been regarded as a favourite Sifter. It was the first Tea Sifter to be regularly manufactured in Ceylon, and the demand has continued, and still continues, to be as regular as in the first years after its introduction. Needless to say that since that time, which dates back almost to the inception of the tea industry in Ceylon, numerous improvements have been made, but it has been impossible to improve to any great extent on our original design, and its main features remain as originally constructed. Improvements in the direction of strengthening the machine have been made from time to time, until it is now considered the strongest as well as the most efficient Sifter in the market.

The machine is driven by a crank supported on a massive standard, and the frame is now wholly constructed of iron, securely rivetted, the only woodwork about it being in the Sieves.

The outturn of this Machine is very large, and it will, without difficulty, deal with an output of 25,000 lbs, made tea per mensem.

Price Rs. 500, Packing for Rail Rs. 10.50

Sole Manufacturers

Brown & Co., Limited.

C. M. CRAMER & SON,

WATCH-MAKERS, &c.,

UNDER THE DISTINGUISHED PATRONAGE OF

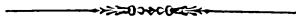
Their Excellencies the successive
Governors of Ceylon,

Admiral Kennedy, &c.

ESTABLISHED 1860

**Repairs to Watches,
Clocks, Chronometers,
& Musical Boxes**

EXECUTED WITH ACCURACY AND DESPATCH.



Contractors to the

CEYLON GOVERNMENT RAIL-
WAY, QUEEN'S HOUSE,
PUBLIC OFFICES, &c.



3, Chatham Street, Fort, Colombo.

Note:—Outstation Constituents are kindly requested to send
Watches, &c., for repairs per registered parcel post
to avoid their going astray.

Clocks of every description in stock.

THE "ALLEYN" SYSTEM OF PLUCKING.

An improved Scientific System whereby the cost of plucking (calculated in the proper Check-roll average) may, on Estates of 5,000 feet elevation and over, be reduced to under seven cents (7 cts.) per pound of made tea, and on good medium and low-country Estates be brought down to under six cents (6 cts.) per lb.

The following are some of the advantages of the System :—

(1) A saving of 2 to 4 cents per pound in cost of production equal to, say, £130 stg. to £260 stg. per 100,000 lbs. of tea.

(2) A perfectly even fine grade of leaf is harvested.

(3) Yields are equal to, or better than, those obtained by medium plucking.

(4) Under this system leaf of good even quality *must* be harvested if a maximum yield per acre is desired, coarse plucking automatically producing decreased crops, a result the exact contrary of that obtained under other and more usual methods.

(5) A superior class of Pruning wood is grown.

The following extracts from private letters and reports show the remarkable success that has attended the system during the past two and a half years.

20th February, 1901.

"Your results, considering the class of Estate you are in charge of, are, I have no hesitation in saying, a record for the island; and if your coolies have got fair pay your plucking is even more so."

(Signed) JOSEPH FRASER.

24th March, 1901.

"Your letter of 20th duly received, and I congratulate you very heartily on the results of last year's working."

(Signed) EDW. S. GRIGSON.

24th February, 1902.

"PLUCKING,—This continues to be carried out on Mr. ALLEYN'S well-defined system with marked success, as regards cheap plucking of good leaf and fine clean red wood to prune on.

It is in my opinion sound both in theory and practice and should be adhered to."

(Signed) JOSEPH FRASER.

A full and thoroughly practical detailed account of the methods of working, together with a clear explanation of the theories on which the system is based, will be sent on receipt of a cheque for Rs. 50.00 subject to such papers being regarded as private and confidential by the recipient.

HENRY M. ALLEYN.

N. B.—The system has been employed on both manured and unmanured tea with equal success.

MEERIA COTTA, MASKELIYA,
CEYLON.

Alleyn's Patent Tea Breaker.

The outturn with the Alleyn Breaker is wiry and even, and looks a natural uncut tea of small size and fine sorting.

The same breaker will equalize any grade to any required size, however small, by merely using different meshed sieves.

For small factories the tea may be divided into two equal grades of first class appearance, thus ensuring regular and quick despatches and steady prices.

In factories where the tea is hand broken a very large saving in labour may be shown by using this "Breaker."

The tea is not rendered choppy or grey in appearance. The larger leaf is not cut in round congou, or ground into dust, being evened down to a pekoe grade.

Prices:

No. 1 Small Size ... RS. 12-50 each.

The No. 1 size is intended for use in conjunction with the ordinary round Tea Sieve, which requires a slight adjustment to adapt it for the purpose. Adjusting Screws Rs. 2-50 per set.

No. 2 Large Size ... Rs. 17-50 each.

This size is intended for use with the special oblong Sieve. Price of Oblong Sieves fitted with patent screw adjustment Rs. 13-50 each.

We are now booking orders for Machine Driven Alleyn's Patent Tea Breakers.

PARTICULARS ON APPLICATION.

Sole Agents and Manufacturers

BROWN & CO., LTD.

Galle Face Hotel,

COLOMBO.

The Hotel de Luxe of the East;
unrivalled position by the Sea.

BUILT, FURNISHED & SERVED IN ACCORDANCE WITH THE MOST COMPLETE AND RIGOROUS DEMANDS OF MODERN COMFORT.

DAINTY CUISINE. SELECTED WINES.

Sea Water Swimming Bath.

Lit throughout by Electricity.

ELECTRIC FANS.

Elevator.

The New "Kitson" Light.

BROWN & DAVIDSON, *sub-Agents for Ceylon.*

This Light for Cheapness of Working and Excellency stands alone.

The "KITSON" Light is a splendid illuminant for Streets, Railways, Docks, Tea Factories, Contractors' Uses, Warehouses, etc., etc.

We are prepared to place Lights on hire for Contractors' use, Fetes, etc., by the Night, or Month.

The following local testimonials are worth perusing:—

LIEUT.-COL. BYRDE WRITES ;

"With regard to the 'Kitson' Lamps sent to the Volunteer Camp at Urugasmanhandiya, I have pleasure in bearing testimony to their great success. One was placed in the Officers' Mess, and the other outside. The Light from the former, in so confined a space was at first found to be glary and dazzling to the eyes, but this was remedied by the placing of a shade round it, when the light given was excellent, and could in no way be complained of, the other Lamp was placed outside the Mess, lighting up the Ground all round for some distance. and was of great use.

"The Lamps seemed to me to be easily worked, and having once been lighted required no further attention. The Officers were all much pleased with the Light. Previous to the arrival of the Lamps, the Mess-Room—a Cadjan-covered Building—was in a comparative state of darkness, though there were 8 large-sized Coconut Oil Lamps, and 2 Kerosine Lamps in use, a few such Lamps as you sent, placed about the grounds would have lighted up the whole Camp."

(Signed) LIEUT.-COL. BYRDE, C.L.I.

THE MANAGER, CEYLON WHARFAGE CO., LTD., WRITES :—

"I have pleasure in informing you that the Kitson Contractors' Lamp which we have now had in use for over two months, has given us great satisfaction: the light is a very steady one, and as we are able to move the Lamp about easily we find it very suitable for our work at the coal grounds.

"The vibration caused by the moving of the Lamp appears to affect the mantles very slightly, as the mantles now in use have been on the Lamp for the last two months, and are still in fair condition. The cost of oil for burning the Lamp is about 3 cents per hour."

(Signed) J. A. RIDGE,
Acting Manager.

For particulars, apply to our Colombo Office in the Australia Buildings.

SALMOND'S PATENT,
"Crescent" Battens

FOR
TEA ROLLERS.

AN APPROVED SUCCESS.

These Battens have now been generally adopted. Wherever they are used a marked improvement is noticed in the twist and general appearance of the Teas, and as they roll the leaf thoroughly without heavy pressure requiring to be applied, a saving in power is gained. They can be fitted to any Roller Table either in plain wood, brass lined, or solid brass.

PRICES.

For 28 in. "Economic," 32 in. "Rapid," and Brown's medium Triple Action Rollers :

In Solid Brass Rs. 180, Brass Lined Rs. 150, Hardwood Rs. 75 per set.

For 24 in. "Economic" and 24 in. "Rapid" Rollers.

In Solid Brass Rs. 150, Brass Lined Rs. 125, Hardwood Rs. 65 per set.

SOLE AGENTS AND MANUFACTURERS :

BROWN & CO., LIMITED,

WHITEAWAY, LAIDLAW & CO.,

COLOMBO.

Also at Calcutta, Rangoon, Bombay, Madras, Singapore, Lucknow, Mandalay, Karachi, Simla, Nainital, Mussooree and Darjeeling.

LADIES' AND GENTLEMEN'S

Tropical Outfitters.

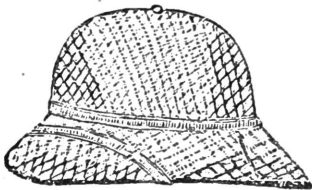
The best value at the lowest fixed prices.

Drapery & Travelling Requisites.

Boots and Shoes.

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THIN UNDERWEAR. A Speciality for Gentlemen in the Tropics.
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SPECIALITIES FOR

Planters' Wear.

Field Boots, Putties, Water-proofs, Ellwood Helmets and Caps.

Sola Pith Hats our own make.

From Rs. 2.75 each.

Send us your name and address for our monthly catalogue which will be sent you Post Free.

Whiteaway, Laidlaw & Co.,

COLOMBO.

Lignum Paint for Woodwork,

(REGISTERED.)

***Fire and White Ant Resisting. - -
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