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REPORT

OF THE

MADRAS SALT COMMISSION,

1876.

MADRAS:

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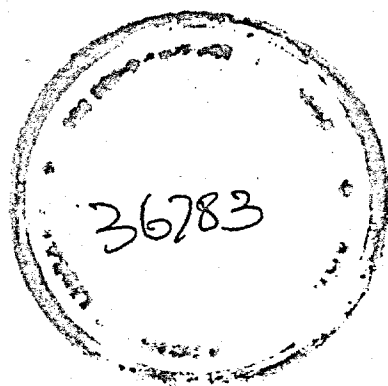


TABLE OF CONTENTS.

CHAPTER I.—INTRODUCTORY.

	Page	Para		Page	Para
Origin and scope of the enquiry	1	1	Conduct of the enquiry	2	5

CHAPTER II.—HISTORICAL.

	Page	Para		Page	Para
Monopoly the first attempt to derive any revenue worth the name from salt in Madras ..	4	12	How Mr. Pelly proposed to deal with the special cases	22	67
General scope of the system	4	13	Government orders on Mr. Pelly's proposals ..	22	68
Monopoly the sole system yet tried in Madras ..	4	14	Further history of the special rates in Chingleput and South Arcot	23	70
The law on which the monopoly is based	5	15	General increase of rate in Northern Districts ..	24	77
Regulation II of 1805	5	16	Changes in Ganjam	24	78
Regulation II of 1807	7	17	do. Vizagapatam	25	79
Regulation II of 1818	7	18	do. Godavery	25	80
Regulation V of 1831	7	19	do. Bistma	25	81
Act XVII of 1840	8	20	do. Nellore	25	82
Act VI of 1844	8	21	do. Chingleput	25	83
Act VII of 1852	8	22	do. Tanjore	25	84
(Madras) Act III of 1865	8	23	do. South Canara	26	85
(India) Act XIX of 1866	9	24	Summary	26	86
(Madras) Act II of 1869	9	25	Substitution of weight for measurement and description of weighing machines	27	89
(India) Act XXIV of 1869	9	26	The platform machine	29	93
(India) Act X of 1872	9	27	Its defects	29	94
(India) Act XI of 1875	9	27	The pan scale	29	96
(Madras) Act VI of 1871	9	28	General review of working of pan scale	29	98
The Agency by which the salt monopoly was managed.—Higher Agency	9	29	Cup scales	30	99
Assistant Agency	10	32	Depots and drawbacks	30	100
Subordinate Agency	10	33	Drawback proposed	30	100
Guards	10	34	Depots—Views of the Board in 1854 and 1855 ..	30	101
Rates of impost upon salt	11	35	Depots along lines of railway; altered views of the Board in 1856 ..	30	102
Monopoly price in 1805	11	36	Exceptions to the General rule ..	31	104
Monopoly price in 1809	11	37	1. In Malabar	31	104
Discount to wholesale traders	11	37	2. In South Canara	31	105
Monopoly price in 1820	11	38	3. In Madras	32	106
Monopoly price in 1828 and in 1844	11	39	4. Home's Gapdam	32	107
Exceptional rates—In 1821-24 in Malabar ..	11	40	5. Negapatam	32	108
Exceptional rates—In 1856-58 in Malabar and South Canara	11	41	6. Minor instances	32	109
Exceptional rates in Malabar on the Cochin frontier	12	42	Spontaneous or swamp salt	33	110
Monopoly price in 1859	12	43	Enquiry into the mode of dealing with it in 1859	33	111
Monopoly price in April 1861	12	44	Subsequent history	33	112
Monopoly price in June 1861	12	44	Salt for fish curing—Enquiry set on foot how far the salt tax interfered with the salting of fish	34	113
Import duty	12	45	Opinion of Sanitary Commissioner	35	115
Enhancements in 1856 and 1859	12	46	Question referred by the Government of India and salting enclosures proposed	35	116
Act X of 1871	12	47	The views of the Board of Revenue	35	117
Act XI of 1875	13	48	Experiment ordered	35	118
Sales and realizations under the monopoly ..	13	51	Results of experiment	36	119
Reduction in number of salt stations and divisions	17	56	Abolition of the Rowanah system	36	120
Changes in the rate of kudivaram or manufacturer's price	17	61	Purchase of salt on credit	37	122
Increase due to change in equivalent of garces ..	18	62	Experimental importations of English salt	37	123
Mr. Pelly's proposals	18	63	Wastage on imports by sea	37	124
What the kudivaram was to cover	18	64			
Special rates at certain stations,—their nature and origin	18	65			

CHAPTER III.—PRESENT SYSTEM.

	Page	Para		Page	Para
The law deficient in clearness	38	126	Powers of police too narrow	40	133
Doubtful what constitutes an offence	38	127	The rights and duties of manufacturers	40	134
Doubtful what courts have jurisdiction	38	128	Their rights	40	134
Doubtful what punishment can be awarded	39	130	Question asked by Mr. Flouiden and Collectors ..	40	135
Other points of doubt	39	131	replies	40	135
Defects of the Repealing Act of 1869	40	132	Mr. W. H. Bayley's remarks	40	136

	Page	Para		Page	Para
Present rights of labourers.....	41	137	Ministerial establishments.....	77	233
do. of manufacturers.....	41	138	Strength of establishments in all grades.....	77	234
These rights only belong to holders of pans in existence before 1850.....	41	139	Duties of Superintendents and their subordinates.....	77	235
What points should be looked to in claims for compensation for works closed.....	41	140	Previous services of Superintendents.....	78	236
The "dictum" system.....	42	141	Board of Revenue the chief controlling authority.....	78	237
The duties of manufacturers: the pattikat mukchika, or ryots' agreement.....	42	142	The present administration how far efficient.....	79	238
Subsequent modifications.....	42	143	A separate head of the department and a separate service recommended.....	79	240
Number of persons interested and the extent of their interests.....	43	144	Subordinate establishments require to be strengthened.....	79	241
How far pans have accumulated in the hands of individuals.....	43	145	A scheme for strengthening and raising the pay of Superintendents and Assistant Superintendents already submitted by the Board.....	79	242
Sub-division of interests in single sets of pans.....	44	146	Protective and preventive arrangements.....	80	243
Comparison of number of registered holders at the present day with the number in 1855.....	44	147	Salt now protected against theft. Theft from the pans.....	80	245
Average production of salt by each registered holder.....	45	148	Strength of police guard.....	80	246
Average production according to Mr. Plowden.....	45	149	The police the sole protection against theft from the pans.....	81	249
Labourers.....	45	150	The "Nayada" frauds.....	81	250
Places of manufacture.....	45	151	Protection against theft from drying grounds.....	82	251
Disadvantages of numerous small works and possibility of reduction.....	46	152	Arrangements in Chingleput for protection of salt in transit to stores.....	82	252
Sites of works. Their general character. Soil Level.....	47	154	Arrangements at Vedaranyam.....	83	253
Grain supply,—its source & character. Strength Party.....	47	155	Proposed remedy for defects.....	83	254
Mechanism of supply.....	48	156	Protection of salt on storage platforms.....	83	255
Construction of works. Size of an alam or set of pans.....	49	159	Measures against collection or manufacture of illicit salt.....	84	256
Proportion of area devoted to concentration.....	50	160	Dangers to the revenue from illicit collection and manufacture.....	84	257
Preparation of pans for manufacture.....	50	162	In Coimbatore.....	84	257
Method of manufacture.....	51	163	Earth-salt and swamp salt.....	85	258
In Ganjam, Vizagapatam, and Godavary.....	51	164	In Ganjam, Vizagapatam.....	85	258
In Kistna, and Nellore.....	51	165	In Godavary, Kistna, Nellore, South Arcot, Madras, Trichinopoly.....	86	259
In Chingleput.....	52	166	Earth-salt in Pondicherry.....	86	260
In South Arcot and remaining districts.....	52	167	Vedaranyam swamp salt.....	87	261
Defects of the system.....	52	168	Illicit salt in Malabar and Canara.....	87	262
Race irrigations become shallower.....	52	169	Salt produced in saltpetre manufacture.....	87	263
Season of manufacture.....	53	170	Recommendations as to saltpetre manufacture.....	88	265
Ditch system.....	53	172	A separate protective and preventive service recommended.....	88	266
Its defects.....	53	173	Earth-salt manufacture in Bellary, Cuddapah, and Kanneel.....	90	271
Disposal of salt when first scraped.....	55	177	Previous modes of the question.....	90	272
Rejection of salt for defects in quality. Specifications on the point.....	56	178	Recent discussion.....	91	273
Practice.....	56	179	Mr. Thornhill's report.....	92	275
Quantity rejected.....	57	180	Measures taken thereon.....	92	276
Delays in storage.....	57	181	Importation.....	92	277
Hyers' wastage.....	59	185	Revenue derived from earth-salt.....	92	278
Inweighment and storage.....	60	186	Mode of manufacture.....	93	280
Weighing machines.....	61	187	Quality.....	94	281
Their defects.....	61	188	Analyses made.....	94	282
Testing arrangements defective.....	61	189	Cost of manufacture.....	95	283
Storage.....	62	190	Selling prices.....	96	285
Formation and covering of heaps.....	62	191	Quantity produced.....	96	287
Platforms.....	62	192	Result of measures of 1873. Classification of modes.....	98	290
Expense of storage by whom borne.....	63	193	How carried out.....	98	291
Payment of Godavaram.....	63	194	Distribution in respect to cut-turn.....	99	292
Test of storage.....	63	195	Outsizable decrease in cut-turn probably fictitious.....	99	293
Wastage.....	64	196	Imports, especially of sea-salt, decreasing.....	100	297
Rates of wastage untrustworthy.....	65	199	Exports from the Ceded Districts increasing.....	101	298
Discount system.....	68	203	Prices not risen.....	102	299
Sale and delivery.....	68	204	Recommendations. Suppression.....	102	300
Discount on wholesale sales.....	69	210	Compensation.....	103	301
Credit system.....	70	212	Arrangements for supply of salt to French settlements. The conventions.....	104	304
Salt for export by sea.....	70	213	Quantity of salt to be delivered. Price.....	104	305
Accounts or records of the Salt Department.....	72	218	Rate of sale in French territory. Cost of transport.....	105	306
Their number and classification.....	73	220	British Indian revenue how affected.....	105	308
Divisional records.....	73	221	Cost charged by French Government.....	106	307
Deputy Collector's records.....	74	222	Salt delivered to Pondicherry authorities by messengers.....	106	310
Returns to be forwarded to the Board of Revenue.....	74	223	Result of this arrangement.....	106	311
How far the records are accurately kept up.....	74	224	Parts as to smuggling of salt from French territory.....	107	312
Returns purely fiscal.....	75	225	Scale of consumption.....	107	313
Revisions recommended. Official year should be adopted.....	75	226	The salt question at Pondicherry connected with general customs arrangements there.....	107	314
Administration.....	75	227	Sir W. Robinson's report on this matter.....	107	315
Collectors.....	75	228	Orders of the Board and of Government.....	108	317
Sub-Collectors.....	76	229	Present state of things. Preventive force.....	108	319
Deputy Collectors.....	76	230	Number of cases of smuggling.....	109	319
Their duties.....	76	231			
Their previous service.....	77	232			
Establishment for supervision of manufacture and storage, and for conduct of sales. Superintendents.....	77	233			
Assistant Superintendents.....	77	234			

	Page	Para		Page	Para
Population of English villages in the mixed territory.....	110	329	Government of India agents. Notification of the terms.....	113	330
The Collector's views.....	110	331	Effect of convention on British Indian revenue as regards Cochin.....	114	334
Prices of salt at Pondicherry depot.....	110	332	As regards Travancore.....	114	335
Prices in adjacent English villages.....	110	333	Arrangements in regard to salt.....	115	336
The question for consideration in the case of Pondicherry.....	111	335	Effect of convention on salt sales.....	115	337
Other French settlements.....	111	337	Results of salt arrangements on the revenue of Travancore and Cochin.....	116	338
General conclusions as to arrangements with French settlements.....	111	338	Rates of consumption in Travancore and Cochin.....	116	340
Arrangements with Travancore and Cochin. Their admission to free interportal trade proposed.....	111	339	Establishments and system of management.....	117	341
Views of Madras Government.....	112	340	The sale by measure another consideration.....	117	342
Their proposals.....	112	341	Effect of this consideration on prices.....	118	345
Estimated results.....	113	342	Conclusions arrived at.....	118	346
			Compensation for wastage and reduction of duty at Bombay.....	119	347

CHAPTER IV.—QUALITY AND COMPOSITION.

	Page	Para		Page	Para
The questions as to composition and quality referred to the Commission.....	119	348	Effect of source of brine supply on composition in connexion with composition and quality of retail salt, evidence as to adulteration and re-evaporation will be noticed.....	127	371
Collection of specimens for analysis.....	119	349	"B" analyses to what directed.....	127	372
What salt completely analysed.....	119	350	Results of these analyses.....	128	373
Bazaar specimens, how analysed.....	119	351	Deduction for other chlorides than that of sodium.....	128	374
Result of analysis and description of physical qualities.....	120	352	Salts from inland and salts from coast districts compared in respect of moisture.....	128	375
Salts in which certain terms are used defined. Considerable variety in composition of salts analysed.....	120	353	Moisture in bazaar specimens as compared with platform specimens.....	129	376
Average composition of platform specimens from each district.....	121	355	Effect on specimens of exposure to the air.....	129	379
Brief comparison of composition of three specimens of imported salt with that of average coast salt.....	122	356	Insoluble inorganic matter in bazaar specimens.....	129	379
Comparison of average Madras salt with other salts obtained by solar evaporation.....	122	358	Organic matter in bazaar specimens.....	129	379
Comparison excluding water.....	123	359	Adulteration; evidence of the analyses.....	129	379
General results. Large percentage of magnesium chloride in Madras salt.....	123	360	Substances, if any, used in adulteration.....	130	379
Insoluble inorganic matter.....	124	361	General conclusion as to adulteration.....	130	380
Organic matter.....	124	362	Does the practice of re-evaporating salt, in order to purify it, prevail?.....	130	381
Chemical impurities other than chloride of magnesium.....	124	363	Are there grounds for believing that the people would prefer salt of a better quality?.....	130	382
Average composition of specimens from north-eastern parts of Chingleput.....	124	364	Complaints against salt now supplied.....	130	382
General conclusions as to composition and quality of Madras salt, as represented by platform specimens.....	125	366	Case of Tinnevely salt imported into Malabar.....	131	383
The picture of Madras salt drawn by Mr. Falk, exaggerated.....	125	367	Certain salts in South Canara objected to.....	131	383
			Signs of preference for better sorts of salt. Collector's reports.....	131	383
			Other evidence.....	131	383
			Whether Bombay salt comes into Madras by rail.....	132	387

CHAPTER V.—COST.

	Page	Para		Page	Para
Instructions.....	132	388	Storage.....	145	418
Object of enquiry.....	133	389	State charges.....	145	419
Materials. General charges and works.....	133	390	Loss by export and discount systems.....	146	420
Police charges.....	133	391	Export system. Old rates.....	146	421
Works.....	134	392	New rates.....	147	422
Gross charges dealt with.....	135	393	Cost of salt at certain export stations.....	147	424
Classification of works.....	135	394	 Nampattam and Vedaranyam.....	148	425
Capital cost of works and interest thereon.....	136	395	Present cost of Vedaranyam salt.....	151	428
Adaptability of this estimate.....	137	397	Loss on exported salt.....	151	429
Land assessment.....	138	401	Loss under discount system.....	152	431
Purchase of salt and payment to manufacturers.....	139	406	Sundry charges against the revenue.....	153	433
Establishment and contingencies.....	139	406	Reply to question whether the system is unnecessarily costly.....	154	434
Miscellaneous charges.....	140	407	Works too numerous.....	154	434
Statement B. Wastage and discount.....	140	408	Kudivaram rates.....	154	435
Interest on stocks of stock.....	141	409	Outlay on works.....	154	435
General supervision.....	142	410	Allotment of money for works.....	155	436
Results stated.....	142	411	Causes of increase in accepted estimates of cost of Madras salt.....	155	437
Kudivaram. Corrections of average.....	143	412	All charges summed up.....	156	438
Analysis of results.....	143	413	Cost in recent years.....	156	438
Pensionary charge for establishments.....	144	415			
Separation of items of cost.....	144	416			
Manufacturers' charges.....	144	417			

CHAPTER VI.—CONSUMPTION.

	Page	Para		Page	Para
Question of consumption referred to the Commission.....	156	440	Addition of Orissa sales; why necessary.....	161	456
Previous estimates of consumption in 1799; in 1804; in 1848-50.....	156	441	Figures from which the calculation starts.....	161	457
Mr. W. H. Barclay's estimate.....	156	441	Estimate of the quantity passing into tract (g); Central Provinces part of the tract;.....	161	458
Mr. Plowden's estimate.....	156	441	Chota Nagpore.....	163	460
Mr. Clarke's estimate in 1868.....	157	442	First approximate rate struck.....	164	461
The Board's estimate in 1867;.....	157	443	Elimination of quantity passing into Hyderabad.....	164	462
and in 1869.....	158	444	" consumption of Orissa, its Tributary Mehals, and the Central Provinces south of the late eastern customs line.....	165	463
These estimates could only be approximate in the absence of a census.....	158	445	Consumption of Madras Presidency with Mysore and Coorg arrived at.....	166	467
Recent correspondence on the subject.....	158	446	The rate for Ganjam and Vizagapatam further considered.....	166	468
Reports from Collectors.....	159	447	No trust worthy data for the elimination of the consumption of Mysore and Coorg.....	166	469
The method followed in the present report.....	159	448	General rate struck; certain corrections.....	167	470
Madras Presidency; small interchanges with Bombay.....	159	449	Remarks.....	167	471
Mysore and Coorg.....	159	450	Consumption in certain areas.....	167	472
The Nizam's territories.....	160	452	Quantity consumed otherwise than as a condiment to human food.....	168	473
Exports of salt from Bombay to the Nizam's territories; by the S. E. branch of G. I. P. Railway;.....	160	453			
by the N. E. branch;.....	160	454			
direct from Konkan salt works; by all routes.....	161	455			

CHAPTER VII.—RETAIL PRICES OF SALT.

	Page	Para		Page	Para
Question for investigation.....	162	474	Low rate of dealers' profit.....	174	489
Materials chiefly used. Revenue Board's price returns. Description of them.....	162	475	Dryage.....	174	490
How prepared.....	168	476	Prices not extensively affected by adulteration.....	174	491
Conversion table.....	169	477	Comparison of Board's quotations with bazaar specimen rates.....	175	492
Bazaar specimen rates.....	170	479	Causes of cheapness. Good communications and geographical situation.....	175	493
Average quotations stated.....	170	480	Few intermediaries.....	176	494
Cost of carriage; by cart;.....	170	482	Competition, especially in railway trade.....	176	495
by rail.....	172	484	Credit and discount systems.....	176	495
Average cost of carriage.....	173	485	Continuous traffic throughout the year.....	177	496
Average rate of profit.....	173	486	General conclusion.....	177	497
Discussion of results;.....	173	487			
Railway traders' wholesale rates compared with retail prices.....	173	488			

CHAPTER VIII.—DISTRIBUTION.

	Page	Para		Page	Para
Exact statistical information almost entirely wanting.....	177	498	S. I. Railway traffic.....	181	504
Destination declared at the time of purchase.....	177	499	Whole traffic by rail.....	182	506
Railway traffic returns.....	179	500	Centres of salt trade on the railways.....	182	506
Traffic from Madras Terminus.....	179	501	S. I. Railway extension.....	183	507
Total traffic by rail.....	180	502	General lines of salt distribution otherwise than by rail.....	183	508
Salt carried from the west-coast.....	180	502	Salt exported by sea.....	184	510
Illicit salt from Malabar.....	181	503			

CHAPTER IX.—MONOPOLY AND EXCISE.

	Page	Para		Page	Para
The question put as to substitution of excise for monopoly.....	185	511	Whether revenue should be assessed on salt-producing lands.....	194	533
Previous discussions on the subject; in 1802-5; and in 1852-54.....	185	512	Compensation in some cases necessary.....	194	534
View of the Board in 1854.....	186	514	Disposal of Government stocks of salt.....	194	535
Subsequent history of the proposal to substitute excise.....	186	515	Probable results of change. Statement of the two sides of the comparison.....	194	536
Recent correspondence on the subject.....	187	516	Cost to the consumer; elements of which it is made up.....	195	537
Views of present Collectors.....	188	517	Effect of the change on first hand price.....	195	538
Practical difficulties in the way of change.....	189	518	Undue enhancement of kudivaram.....	196	539
Change must be gradual.....	189	518	Subletting of pans.....	196	540
Competition among manufacturers essential to success.....	189	519	How far the kudivaram exceeds actual cost of production.....	197	541
Poverty of manufacturers.....	189	520	First hand price of salt at the Bombay works.....	198	542
Existing works, how to be dealt with.....	190	522	Effect of change on cost of supervising and preventive establishments.....	198	545
"Sundry" works.....	191	523	Possibility of new intermediaries springing up.....	198	546
Ways of storage and for revenue purposes.....	191	524	Capitalists how far to be encouraged.....	199	547
Works of manufacture.....	191	525	Effect of change in the class of persons purchasing.....	199	548
Revenue and prevention charges how to be recovered.....	192	526	Number of intermediaries in distribution and rates of profit.....	199	549
A cess on salt sold the only feasible method.....	192	528	Effect of change on quality of salt.....	200	550
Possibility of an acreage charge considered.....	193	529	do. do. cost of carriage.....	200	551
The rate of cess how to be calculated.....	193	530	Whether deficiency of supply is likely to arise.....	200	552
Adjustment of monopoly price in works still retained under the monopoly system.....	193	531	Summing up as to cost to consumer.....	201	553
Whether the cess should be a separate charge or incorporated with excise.....	193	532	Effect of change on the Government revenue.....	201	554

CHAPTER IX.—MONOPOLY AND EXCISE—(continued).

	Page	Para		Page	Para
Whether reduction in amount of salt consumed is probable.....	201	555	The 'let well alone' argument noticed.....	202	560
Danger from illicit manufacturers the same.....	201	556	Places where excise should be first introduced.....	203	561
Effect of change in regard to illicit removal of licit salt.....	201	557	Northern China (reput.....)	203	562
Check-weighments whether necessary at monopoly works.....	202	558	Covelong.....	203	563
General summing up of conclusions on the two questions put.....	202	559	Tuticorin and neighbouring works.....	203	564
			Other sites.....	203	565
			Appointment of a special officer to supervise this measure essential to its success.....	204	566
			Excise law.....	204	567

CHAPTER X.—POOREE SALT.

	Page	Para		Page	Para
Specific question referred.....	205	569	Orders of Government of India.....	211	586
Papers obtained from Boards of Revenue, L. P. and Madras.....	205	570	Arguments of the Collector of Ganjam.....	211	587
Brief sketch of history of salt manufacture and supply in Orissa. System under monopoly.....	205	571	The Commission's local enquiries.....	212	588
Orissa salt under the monopoly mostly intended for export to Calcutta.....	206	574	The questions to be answered.....	212	589
Intention of Government manufacture.....	206	574	Cost of Pooree salt in the past.....	212	589
Prices raised and the effect.....	207	575	Can the cost of manufacture be reduced?.....	212	591
Various proposals for protection of the Lower Provinces revenue against under-taxed Madras salt.....	207	576	Payment to actual salt-workers.....	213	591
Passage of Madras salt through Bengal en route to the Central Provinces.....	209	578	The relative advantages of Ganjam and Pooree as places of salt manufacture.....	213	592
Act X. of 1874.....	209	579	Storage.....	213	594
Question of restrictions on transit of Ganjam salt entering Orissa.....	209	580	Preventive establishment.....	214	595
Comparative position of Ganjam and Pooree "karimch" in the market.....	209	581	Licenses' own establishment; supervising establishment.....	214	593
Cost of making the latter.....	209	581	Other items.....	215	597
Analysis of the table.....	210	582	Charges at Ganjam.....	215	593
Manufacturers' profit.....	211	583	Conclusion as to possible reduction in Pooree cost.....	215	599
Views of Commissioner of Orissa.....	211	584	Whether even at reduced cost Pooree salt can, with a duty of Rs. 2-4-0 a maund, hold its own in the market.....	215	600
Mr. Dampier's proposals.....	211	585	Quality of the two salts.....	217	605
			General conclusion as to prospects of Pooree salt.....	218	607

CHAPTER XI.—RECAPITULATION AND CONCLUSION.

	Page	Para		Page	Para
Summary recapitulation of conclusions and recommendations.....	218	608	Maps.....	224	609
			Edition of Mr. Plowden's report referred to.....	224	610
DISSENT BY MR. T. VENKASAMI ROW.....				225	
DISSENT BY THE PRESIDENT.....				241	

APPENDIX A.

	Page.		Page.
PART I. Commission's Circular of 28th January 1876 and replies thereto.	i	IX. General remarks.....	xxxii
The circular.....	i	Reply of Collector of Kurnool.....	xxxv
Replies:—		PART II. Results of analysis.	
I. Composition and Quality.....	ii	Letter from Surgeon H. J. Hazlett, Salt Analyst to the Commission, dated 21st June 1876.....	xxxvii
II. Earth-salt and spontaneous salt.....	viii	Analyses and description of specimens of salt from salt-works and salt-stores in the Madras Presidency.....	xliv
III. Wholesale prices.....	xiv	Analyses of specimens of salt from district markets.....	l
IV. Distribution (para. 10 of circular).....	xix	Analyses of earth-salts.....	lv
V. " (para. 11 of circular).....	xxiv		
VI. " (para. 12 of circular).....	xxv		
VII. Consumption.....	xxvii		
VIII. Value, for other purposes, of land occupied by salt-works.....	xxix		

APPENDIX B.

	Page.		Page.
Statement shewing salt transactions in each district for 10 official years ending 1874-5.....	ii	Statement shewing average salt transactions at each division from Fash 1275 (1865-6) to Fash 1284 (1874-5) inclusive.....	xxi

APPENDIX C.

No.		Page.	No.		Page.
No. I.	Précis of replies of Commissioners of Northern Circars and of Collectors to Question 2 of the Circular of the Board of Revenue, dated 5th April 1884, as to position and rights of manufacturers	i	No. VII.	Statement showing the average quantity of salt stored in each month in each district of the East Coast, during the last five years	xv
No. II.	Statement showing the area of each salt-work, the number of sets of pans, the number of registered owners, and the average out-turn of salt per owner	iv	No. VIII.	Statement showing net wastage from all causes	xvi
No. III.	Statement showing the maximum and minimum out-turn at each division from Fasli 1275 (1865-6) to Fasli 1284 (1874-5)	v	No. IX.	Statement showing ordinary wastage, special loss excluded	xvii
No. IV.	Statement showing the area of the largest, smallest, and of an average, set of pans in each division	vi	No. X.	Abstract of the "account current of salt" forwarded monthly from each district to the Board of Revenue	xviii
No. V.	Statement showing the rainfall on the coast of each maritime district on the East Coast during the last five years	vii	No. XI.	Statement showing the strength of establishment and police at each salt division in the year 1874-5	xviii
No. VI.	Statement showing the principal facts connected with manufacture, &c., at each division for five years ending 1875	viii	No. XII.	Extracts from the report of the Acting Collector of Ganjam on the Patur illicit manufacture, dated 28th July 1872	xxi
			No. XIII.	Conventions with France on the subject of salt	xxiii
			No. XIV.	Statement showing the quantities of salt sold at each coast and inland depot in Travancore in each of the years 1849 and 1859 M. E. (nearly corresponding to 1873-4 and 1874-5)	xxvi

APPENDIX D.

	Page.		Page.
PART I. Cost of Salt.		2. Statement showing the exports of salt from the Madras Railway terminus for ten years 1856-1875	xxiii
A. Statement showing the details of salt charges in the several districts and interest on outlay on permanent works for ten years ending 1874-5	ii	3. Statement showing total salt traffic on the Madras Railway since its opening	xxiv
B. Statement showing the calculation of cost of salt per maund	viii	4. Statement showing the exports of salt in maunds from the principal stations on the South Indian Railway for two years 1874 and 1875	xxiv
PART II. Retail prices of Salt.		5. Statement showing the salt traffic between district and district on the Madras Railway in maunds for three official years	xxv
1. Statement showing retail prices and estimated cost per maund of salt at certain stations in the Madras Presidency	xii	6. Statement showing the traffic between district and district on the South Indian Railway in maunds for three calendar years 1873-1875	xxvi
2. Statement showing further bazaar prices	xxi	7. Statement showing the destinations of salt exported by sea on private account for twenty years ending Fasli 1284 (1874-5)	xxvi
3. Bazaar prices of Kurnool earth-salt	xxi		
PART III. Distribution.			
1. Statement showing the declared destinations of salt sold for inland consumption	xxii		

APPENDIX E.

No.		Page.	No.		Page.
No. 1.	A letter from Mr. F. F. Handley, Covanted Deputy Collector in charge of the Pooree district, dated 14th April 1876	i	No. 3.	A letter dated 22nd May 1876, from Messrs. Parry and Co. of Madras	xv
No. 2.	A memorandum on the Madras salt system by the Hon'ble F. Macfadyen, (Messrs. Arbuthnot and Co.)	xii	No. 4.	A statement made to the Commission by Mr. Caramide, Salt Merchant of Madras	xvi
			No. 5.	A letter from J. J. L. Ratton, Esq., M.P., on special duty in connexion with salt, dated 15th May 1876	xviii

- 3 Maps, (1) a general map of the Madras Presidency illustrating the present system of manufacture;—
 (2) a map of Travancore and Cochin;—
 (3) a map of the N. E. Madras frontier to illustrate the chapter on consumption;—
 will be found in pocket within the cover.

CORRIGENDA ET ADDENDA.

- Page 16, second line of para. 53; after "decrease" add "in the quantity of salt sold."
 Page 19, line 15; for "250 and 251," read "117 and 118."
 Page 20, line 9; for "318" read "164."
 Page 20, line 26 from the bottom; for "kari" read "Kani."
 Page 20, line 4 from the bottom; for "for all salt" read "of all salt."
 Page 24, line 26; for "being" read "been."
 Page 31, lines 16 and 17; for "on condition" read "on the understanding."
 Page 47, line 10 from the bottom; for "bar at Ennore" read "Ennore and Pulicat bars."
 Page 47, line 12; for "in the ultimate" read "is the ultimate."
 Page 55, line 13 of para. 175; after "the dittam system is" add "in this respect."
 Page 61, line 1; for "thus" read "then."
 Page 62, line 9; for "better" read "wetter."
 Page 66, last line but one; for "restoring" read "re-storing."
 Page 72, line 3; for "including Travancore" read "including the ports of Travancore and Cochin."
 Page 75, line 15; after "record" insert "in the Board's office."
 Page 75, line 26; for "retain" read "return."
 Page 84, line 31; for "when" read "where."
 Page 85, in the marginal abstract to para. 258 omit "in other districts."
 Page 88, line 7 from the bottom; for "it usually" read "it is usually."
 Page 97, para. 287, marginal table opposite Ramalakota; for "152" read "153" and in total for "2,280" read "2,281."
 Page 98, para. 290, in the table, number of modas in Kurnool; for "2,221" read "2,281."
 Page 101, a line should be drawn between the figures opposite "Chinna Ganjam" and those opposite "Kanuparti" in the first marginal table.
 Page 111, para. 327; for "Rs. 1,000" read "Rs. 1,500."
 Page 122, first table; Other foreign salts in average salt of Madras manufacture; for "1-199" read "1-899."
 Page 127, line 2; for "tables" read "table."
 Page 129, line 3; for "analysis" read "analyses."
 Page 131, last line but one; for "stored" read "of storage."
 Page 135, in the heading of column 2 of statement in para. 393, for "shares" read "share."
 Page 137, line 6 from the bottom; for "of of" read "of the."
 Page 140, line 7; for "is deemed" read "are deemed."
 Page 142, column 3 of statement; opposite Madura, for "1-6" read "1-6-7."
 Page 142, column 3 of statement; opposite Tinnevely, for "1-6-7" read "1-6-0."
 Page 142, the last column of the same statement; opposite Malabar, for "8-4-8" read "8-7-8."
 Page 144, line 8 from the bottom; for "at the net rate, but not at the gross" read "at the net rate actually realized, but not at any higher rate."
 Page 148, line 19; for "over 4 Rs." read "over Rs. 3-11-1."
 Page 150, line 14; for "1,205,869" read "1,205,369."
 Page 150, column 2 of statement in para. 427, cost of both Vedaranyam and Negapatam salt; for "0-2-7" read "0-2-7."
 Page 151, column 2 of section 2 of statement in para. 430 opposite Covelong; for "2-8-4" read "2-2-4."
 Page 153, marginal table of para. 433 opposite Chingleput; for "339-12-0" read "3,399-12-0."
 Page 154, first line of para. 435; for "This is" read "The rates of Kudivarum constitute."

- Page 155, para. 439, marginal statement, 2nd column, opposite works for storage and revenue purposes; for "0-1-0" read "0-1-2," and in total for "3-5-9" read "3-6-1."
- Page 166, line 8; for "Central Province" read "Central Provinces."
- Page 171, line 4; for "given in" read "given. In."
- Page 173, line 12; for "last two" read "fifth and sixth."
- Page 177, line 10; for "on rise" read "no rise."
- Page 178, line 4; after "Central Provinces" add "for which they are really destined."
- Page 180, first marginal table opposite Fasli 1232; for "52,834" read "42,834."
- Page 180, last line but one; for "together with" read "and."
- Page 182, heading of column 1 of second table; for "Districts" read "Stations."
- Page 183, first marginal table, opposite 1874-75; for "3,76,129" read "2,76,129"
- Page 217, line 20; for "low" read "lower" and for "import" read "impost."
- Appendix B. pp. xviii and xix; under the heading "Statement shewing salt transactions for ten years," insert "for the whole Presidency."
- Appendix C. page v; in the heading of statement No. III; for "and Fasli 1234" read "to Fasli 1234."
- Do. page vi; the same correction.

REPORT

OF THE

MADRAS SALT COMMISSION, 1876.

CHAPTER I.—INTRODUCTORY.

1. The enquiry which has been entrusted to us to carry out had its immediate origin in a despatch from H. M.'s Secretary of State for India to the Government of India, dated 29th July, 1875, wherein was forwarded a paper written by Mr. Falk, President of the Salt Chamber of Commerce at Northwich, on the system of salt revenue administration pursued in the Madras Presidency.

2. Mr. Falk had, however, when visiting India in 1874, submitted direct to the Government of India a letter, dated 12th December, 1874, in which he criticised the Madras monopoly, and his criticisms had already formed the subject of correspondence with the Government of that Presidency, before the arrival of the despatch above mentioned.

3. Extracts from Mr. Falk's paper were forwarded to the Government of Madras* and the question of the advantage of substituting excise for a monopoly was definitely raised. Certain correspondence then followed, which it is not necessary to summarise here, as the points involved will be duly noticed in their places in this report. Suffice it to say that the Board of Revenue and the Government of Madras were at issue with Mr. Falk on matters most essential to his case, and that the Secretary of State directed further investigation of the whole question either by a single person or a Commission.

4. The Government of India chose the latter course, and the following Resolution† shows the constitution of the Commission and the general scope of the enquiry which they were instructed to carry out. At the same time it was intimated to the Commission, through the President, that, though the Resolution indicated the main points to which enquiry should be directed, it would be open to them to investigate and record the results of their deliberations upon any kindred questions, especially such as would aid in elucidating the more important points directly at issue. The question of the West Coast salt supply and the Square-rigged Vessels Bill have also been referred to the Commission and have been separately reported on. The Resolution is as follows:—

* See Mr. C. J. Lyall's letter, No. 354, dated 18th December 1874.

† No. 379-381. Department of Revenue, Agriculture and Commerce, dated 18th Nov. 1875.

RESOLUTION.

[CUSTOMS AND SALT.]

READ—

Despatch from Her Majesty's Secretary of State for India, No. 9 (Separate Revenue), dated the 29th July, 1875, desiring an enquiry into the merits of the existing system by which the salt revenue is raised in the Madras Presidency under a Government monopoly and the expediency or otherwise of replacing it by altered arrangements, together with other correspondence on the subject.

OBSERVATIONS.

His Honor the President in Council observes that the question of substituting an excise for the existing monopoly system has already been disposed of as regards the two western districts of Madras. As regards the expediency of effecting a similar change of system in the rest of that Presidency, the information available is too imperfect to permit as yet of any definite conclusion being arrived at.

2. Looking to the serious importance of the whole subject, economically, fiscally and socially, His Honor

President.
C. Fitchard, Esq., Collector of Salt Revenue, Bombay.

Members.
J. George, Esq., Secretary to the Board of Revenue, Bengal.
H. E. Stokes, Esq., Secretary to the Board of Revenue, Madras.
R. M. Adam, Esq., Deputy Commissioner, Inland Customs Service.
Venkataswami Rao, 1st Assistant, Revenue Secretariat, Madras.

Secretary.
W. A. Willock, Esq., Acting Senior Assistant, Vizagapatam.

has decided, after communication with the Government of Madras and with their cordial concurrence, to appoint a Commission to investigate and report thereon. Accordingly, His Honor the President in Council is pleased to nominate the gentlemen noted on the margin to be a Commission for this purpose.

3. The following questions, among others, will more specially engage the attention of the Commission:—

I.—What is the quality and composition of the salt produced at the various works and sold by Government wholesale and by the dealers retail in different parts of the Presidency?

II.—Are there any grounds for supposing that the people would prefer, or appreciate, a better quality of salt than that now supplied to them? Is it anywhere the practice to re-dissolve and evaporate the Government salt in view of obtaining a purer article for consumption? Is it anywhere the practice for the wholesale purchasers of and dealers in Government salt to adulterate it before allowing it to pass into the consumer's hands? Upon this subject it will be interesting to ascertain if any Bombay salt has been introduced into the Presidency of Madras by land since the opening of the railway.

III.—What is the actual cost to Government of the monopoly salt, including under cost all expenditure or loss, actual or constructive, on account of or connected with the salt, that would be avoidable were the entire salt supply furnished under a self-supporting system of excise, or imported by sea, made to pay duty before leaving bond and left thereafter free from interference?

IV.—What is the actual retail selling price of monopoly salt, (adulterated or not, as the case may be), in towns and village bazars in different portions of the Presidency, and if in any locality this very materially exceeds the Government monopoly price, what are the items that compose the excess? The Commission should collect information regarding the distribution of the salt, the cost of carriage to different parts of the Presidency, and the amount of such salt which is exported to other parts of British India and to Native States; and give their opinion as to the average annual consumption of salt per head in the Madras Presidency.

V.—Is the system under which Government now obtains its salt in any respect needlessly costly? What is the average percentage of wastage—*first*, between the time of manufacture and the taking over the salt by Government, and *second*, between this latter and the final sale by Government?

VI.—What is the extent and value for purposes other than salt manufacture of the whole of the land in the Presidency now occupied by open salt works?

VII.—Are there any, and if so what, practical difficulties attendant on substituting a system of excise for the present monopoly?

VIII.—What would be the probable result—*first*, as regards the cost to the consumer, *second*, as regards the net revenue to Government—of substituting an excise for the present monopoly?

IX.—The Commission will also examine and report on the cost of manufacturing salt in Pooree and other salt works in Orissa which border upon the Madras Presidency.

5. In pursuance of the above orders, the Commission assembled at Madras on the 10th January, 1876. Mr. Stokes and Mr. Venkataswami Rao were not, however, relieved of their duties in

the Board of Revenue and the Government Secretariat Office respectively till the 25th and 28th January, 1876.

6. Meantime a room in the Board's Office had been placed at our disposal, papers were being got together and, the Commission having been allowed to correspond direct with Collectors, certain circulars, calling for information on points where the Board's records did not suffice, were prepared and issued, and arrangements were made with the Government of Madras for obtaining the services of a qualified officer to conduct analyses of the salts which our instructions required us to examine. The duty was assigned to Surgeon H. J. Hazlett, of the Indian Medical Establishment.

7. On the 30th January, 1876, the Commission proceeded to visit the northern districts of Madras, and Pooree. We landed at Gopalpore and thence went to the Ganjam pans and across the Chilka lake to Pooree, visiting on the way some of the stores of karkash salt near Barabkudi. During the Commission's stay at Pooree, a more thorough examination of these stores and the neighbouring salt grounds was carried out. We met Mr. Millett, the Collector of the district, at Pooree, but Mr. Ravenshaw, the Commissioner of Orissa, was unfortunately absent on his hill-tour, and we were unable to arrange a meeting with him. From Pooree we returned by steamer to Calingapatam and thence visited the Womera villi pans. Then we moved north to the important works of Nowpada, which were in full operation. Turning south to Chicacole we successively inspected the pans at Mahfuzbandar in Ganjam and at Kuppili, Konada and Bimlipatam in the Vizagapatam district. From Waltair the Karasa and Balacheruvu pans were visited, and, as the steamer stayed a whole day at Coconada, the opportunity was taken to inspect the works of Penuguduru. We then returned to Madras, which we reached on the 11th March. Mr. Davidson, Collector of Ganjam, accompanied the Commission throughout his district, and to him as well as to Mr. Grahame, Sub-Collector in charge of Chicacole, we are indebted for the most cordial assistance. The Deputy Collector, Mr. P. Dharma Rao, was also present with us at all the works, (except Mahfuzbandar where we did not need his attendance), and gave material aid. The Collector of Vizagapatam was unable, owing to hill affairs, to meet us, (except for a few minutes on our way up the coast), but the Deputy Collector, Mr. Sharkey, was with us throughout our tour in that district. The Deputy Collector at Cocanada also accompanied us to Penuguduru.

8. Materials in the meanwhile had been accumulating, and the Secretary was preparing, under our instructions, the heavy masses of figures which now appear as Appendix B. Owing to the absence in the central offices of any detailed and collected record of the salt administration of each year, and to the fact that, while the accounts of stock, manufacture, storage, sale of salt and of certain expenditure are, under the orders of the Board, kept for Fasli years, those of realisations, expenditure on works, and pay of establishments, are kept by the Accountant General for official years, it was by no means an easy task to get together the information we required. The monthly accounts current and the yearly janabandi reports do indeed give certain facts, but they had to be compiled under our orders, as they are nowhere brought together in any annual report. At present the only form in which the facts of the salt revenue administration are annually collected, is that portion of the Board's Settlement Report which treats of this branch. The record is very brief and deals almost exclusively with the fiscal aspect of the matter. The want of a fuller annual report, which would at least serve as an index to the chief events in the history of the administration and would at once form a scaffolding on which a connected report could be built, obviously must throw delay in the way of such an enquiry as ours. But much of the information needed was not in any form available in the Board's records, and references to Collectors became necessary on many points. The Collectors again had in their turn to obtain the required statistics from the salt divisions and take a good measure of delay being thus involved. The last reply to a circular issued by us on the 28th January 1876 was not received till early in June. We make these remarks not in condemnation of district officers, whose many and arduous duties sufficiently excuse the delay, but as some explanation of the prolongation of our own work, which it was hoped would not last more than three months, but which will cover at least twice that period. The Commission have received every aid from the Government of Madras and from the Board of Revenue.

9. Towards the end of March, the Commission left Madras for the Tinnevely district. We there visited the salt works at Arasady, and those of the Karapad, (Tuticorin), Levingepuram and Sivandakolam divisions near Tuticorin. In the absence of the Collector, who was kept away by other duties, the Salt Deputy Collector, Mr. Ganapati Pillay, accompanied the Commission on their

inspections, and afforded all needful information and assistance. From Tuticorin we travelled to Tanjore, where we conferred with Mr. Thomas, the Collector; and from Tanjore we went on to Negapatam and Vedaranyam, inspecting the salt pans and stores at both places as well as the great salt swamp near Point Calimere. After a tour of about a fortnight's duration, the Commission returned to Madras, and thence visited the salt works at and near Ennore which supply the town of Madras and the inland districts served by the Madras Railway. Mr. D. V. Narasingha Rao, the Salt Deputy Collector of Chingleput, accompanied us and gave us useful assistance.

10. Finally the Commission visited Beypore and Calicut, where we were met by Mr. Logan, Collector of Malabar, and by the Salt Deputy Collector of South Canara, Mr. Ball. The cordial aid rendered by these officers the Commission desire to acknowledge. From Beypore we returned to Madras and, having drafted and sent to press the report on the questions affecting the West Coast salt supply, in the last week of May repaired to Ootacamund to write our general report. During our tours and in the intervals between them we have received statements both verbally and in writing from many persons, besides Government officials, interested in the manufacture and distribution of salt; e.g., Hon. P. Macfadyen, Messrs. Parry and Co., and Mr. Cammiade, Mr. Church, Traffic Manager of the Madras Railway, and Native salt merchants at Madras, Calicut and Pooree. We desire to thank these gentlemen for the information they so willingly offered.

CHAPTER II.—HISTORICAL.

11. We propose in this chapter to trace in its general outlines the history of the administration of the salt revenue in the Madras Presidency and to notice more particularly the changes that have taken place since the date of Mr. W. H. Bayley's memorandum, a paper to which all those who have had to study the subject will be ready to acknowledge their great obligations. A detailed sketch of the existing system of management will be found in another chapter.

12. The salt revenue in Madras can hardly be said to have a history before the establishment of the Government monopoly. In a letter of the Board of Revenue to Government, dated 28th June 1804, the gross sum yielded by salt is stated to have been 63,316 pagodas or Rupees 2,21,606, while Mr. Bayley in his memorandum says that "previously to the enactment of Regulation I, 1805, the annual revenue from salt was about 80,000 pagodas or 2,80,000 Rupees." This insignificant revenue appears to have been raised in various ways; sometimes the pans were farmed out, sometimes the produce was divided according to customary rates, (depending on the status of the holder), sometimes revenue posts were established and a transit duty levied.

13. In 1805 the monopoly was introduced in all parts of the Presidency except Canara and Malabar, and in 1807 was, with certain reservations due to local circumstances, extended to those two districts likewise. The main principle of the system is expressed in its name; the sale of salt except to Government is made illegal. But not only so; Government also reserves to itself alone the power of opening salt pans, and the manufacture of salt except for sale to Government is forbidden.

14. Since 1805 this monopoly has continued in uninterrupted existence. It is not necessary for the purpose of this brief history to enter upon the discussions which preceded the establishment of the system. Those, so far as they bear on the issue between monopoly and excise in its present aspect, will be mentioned elsewhere.

15. We propose in the first place to sketch the history of the law on which the monopoly is based. Madras Regulation I, 1805, modified so far as it applies to Malabar and Canara by Regulation II, 1807, and altered, (chiefly in minor points), by certain subsequent enactments, is still the law which governs the administration of the salt revenue of the southern Presidency.

Reg. I, 1805. 16. The provisions of Regulation I, 1805, are the following:—

Section 2. The manufacture and sale of salt is placed under the immediate direction and control of a General Agent,* in subordination to the Board of Revenue;

Section 3. The manufacture, sale, transit, export and import of salt, except on account or with permission of Government, is prohibited, under pain of confiscation of such illicit salt.

Section 4. Subject to the limitation in the preceding section, the manufacture, and sale are to be conducted "in the usual manner." "The shares heretofore, in some places, paid as wages to mirasi manufacturers and the hire to labourers are to be paid" at the same rates as before, unless altered by mutual consent. The share of mirasidars and the hire of labourers are, however, to be converted into money "at the average selling price of salt at the pans, calculated on the 5 years preceding the date of this Regulation." Inams, rusums and other allowances paid in kind are to be similarly converted. Registers of salt made and sold are to be kept, and advances may be made to manufacturers.

Section 5. The General Agent is empowered to determine where salt is to be made and the quantum. He may either limit the quantum or suspend manufacture entirely, in which cases, with the previous sanction of the Board of Revenue, compensation is to be "made in the manner pointed out in clause 1, section 4 of this Regulation to the persons whose interests may be fairly proved to be affected by such suspension or limitation."

Section 6. Mirasi manufacturers declining to make salt may, on proof of refusal, established to the satisfaction of the *zillah judge*†, be ejected and shall in such case forfeit all benefits formerly enjoyed, and Government may employ other labourers in their pans.

But, (Section 7), no person is to be compelled to make or transport salt.

Section 8. All proprietors of land whether malguzari or lakhiraj, all zemindars, mirasidars, farmers or managers of land are forbidden to establish salt works except on account or with the permission of Government. Breach of this prohibition or connivance at such breach is made punishable, on proof before the judge of the *diwani adalat*‡, by a fine of 3,500 Rupees recoverable as a decree of court. One-third of fines levied shall be paid to the informer, another third to the Collectors, their assistants or officers by whom the offence shall have been detected and reported, and the remainder to Government. The decisions of *Zillah Courts*§ are liable to appeal. The judge adjudging fines must, before proceeding to execute the decree, send a copy to the Governor in Council, who may countermand sale of the land¶ and order the whole or part of the fine to be received in money, or may remit the whole or part.

* This office was abolished in 1808, as we shall see further on; but the section stood for another 61 years till repealed by (Madras) Act II, 1869.

† Advances were afterwards much discouraged and are now unknown except in cases of special calamity and under the sanction of Government.

‡ See Regulation V, 1831, which modifies the jurisdiction.

§ Modified by Regulation V, 1831. Again repealed by (Madras) Act II, 1869.

¶ Modified by Regulation V, 1831.

¶ Superseded by Regulation V, 1831, and again repealed by Madras Act II, 1869.

Section 9. The import* of all salt made or produced without the limits of the Madras Presidency, "excepting on account of Government, or with their especial sanction, or in virtue of a regulation duly enacted and promulgated for the purpose," is prohibited and salt so imported is made liable to confiscation.

Section 10. The transit duty on salt is abolished.

Section 11. A price fixed by the Governor in Council is to be paid by purchasers at place of manufacture or store or elsewhere, and purchasers are to be exempt from all further demand and to receive a rawānah "certifying the purchase, authorising the exemption, and specifying the quantity of salt intended to be transported under it, the place where the salt was procured, whither intended to be transported and the manner in which it is carried." Officers engaged in selling salt are to receive a written authority.

Section 12† provides for the issue and register of rawānahs and makes salt transported without a rawānah or with an insufficient rawānah liable to seizure and confiscation.

Section 13. Proprietors, farmers and renters of land, managers of estates, amins and tahsildars are bound to give information of illicit salt manufacture, under pain of fine equal to one-fourth of the value of the salt§ made with their knowledge or connivance. Such salt may be seized.

Section 14. Magistrates, officers of police, collectors of revenue and customs, master attendants and beach-masters are to give their aid in preventing illicit dealings in salt. Police officers are to comply with requisitions for aid duly made, and to give notice of illicit transactions, but not to seize or detain salt themselves unless unaccompanied by a proper rawānah. Magistrates, Collectors, "and other public officers of Government" may direct seizure of salt believed illicit, but the earliest possible notice is to be sent to the Board and General Agent. Salt so seized is to be made over to the nearest Collector. Subordinate officers seizing salt must report at once to their superiors; otherwise they are liable to an action for damages by the proprietor, to dismissal and to fine.

Section 15. "Officers of Government" are entitled to 33 per cent. of the proceeds of salt attached on just ground; "the subordinate officers of Magistrates, Collectors, &c.," to 25 per cent.

Section 16. Magistrates or Collectors may release salt unjustly seized, reporting to the Board and General Agent.

Section 17. The Board is to adjudge all cases of seizure. If the salt be released, the person seizing it may be left to defend himself if sued by the owner, or he may be indemnified for the result of the suit; on the other hand, the Board may indemnify the owner for loss caused by the seizure. All proceedings are to be reported to Government.

Section 18. "Any person engaging in any clandestine or fraudulent trans-
"action with respect to rawānahs or passes, smuggling or conniving at the smug-
"gling of salt, making, purchasing, obtaining, selling, or weighing salt in an illicit
"manner" is liable to fine at the discretion of the judge¶ and to permanent exclu-
sion from the service of the "Company."

Section 19 provides for the supply of salt required by the Bengal Govern-
ment, whether shipped by contractors or "on permit."

Section 20|| makes fines recoverable in the "zillah adawlut."

* Rescinded by Regulation II., 1818, as to import by sea.

† The words in italics repealed by Section 42, Act VI., 1844.

‡ Repealed by (Madras) Act II., 1869.

§ See Regulation V., 1831, however.

¶ See Regulation V., 1831.

|| Repealed by Regulation V., 1831. Again repealed by (Madras) Act II., 1869.

Section 21 permits persons aggrieved to prosecute Government officers.

Section 22 directs promulgation of the law, and

Section 23* exempts Canara and Malabar from its operation.

17. Regulation II., 1807, extended the greater part of Regulation I., 1805, to Malabar and Canara. Section 2 of the Regulation declares the "land-holders, proprietors and inhabitants of Canara and Malabar to be at liberty to carry on the manufacture of salt as heretofore;" but the salt so manufactured is to be sold to the officers of Government alone at a price to be fixed "with the consent of the respective parties and with reference to the average sale price of several years preceeding the establishment of the mono-
"poly." By Section 3 all salt sold by a proprietor, land-holder, inhabitant or manu-
"facturer, [Reg. V., 1831, adds 'farmers, renters and managers'], except to Government
or the Agents of Government is made liable to confiscation, and on a repetition of the
offence the party selling it may be fined at the discretion of the judge† a sum not
exceeding 2,500 rupees. Section 4 exempts Canara and Malabar from the opera-
tion of Sections 6 and 8 of Regulation I., 1805; but in all other respects declares
that Regulation to be extended to "those provinces."

18. Regulation II., 1818,‡ withdrew the absolute prohibition of importa-
tion of salt by sea, but imposed a totally prohibitive
rate of duty, viz., Rs. 350 per garce. It also provided
for the bonding of salt.

19. The general scope of Madras Regulation V., 1831,§ is explained by its
preamble. It was to remove from the civil courts the
adjudication of cases of penalties for breach of salt,
tobacco and stamp laws.

Section 2 expressly repeals such parts of Regulation I., 1805, and Regula-
tion II., 1807, as require penalties to be sued for in civil courts and declares
every such penalty recoverable by a criminal prosecution.

Section 3 lays down the rules of procedure to be followed, in case of infor-
mation of clandestine illicit manufacture, in order to bring the accused before the
criminal court. It applies the same rules to persons charged under Section 13,
Regulation I., 1805, (proprietors and others failing to give information), or under
Section 3, Regulation II., 1807, (selling salt except to Government, second offence),
and adds, in the latter Regulation, "farmers, renters and managers" to the list of
persons liable. *Tahsildars and inferior officers of police are not to take cognizance
of these offences, such cognizance being reserved to magistrates and their assistants.*||

Section 4 directs the criminal court to enquire into the case in the manner
prescribed in Regulation VI., 1822, for investigation of charges of unaggravated
house-breaking. On conviction, the court may sentence the offender to pay the
penalty specifically prescribed for the offence, or in other cases such penalty as may
appear just and proper, provided that, when the penalty is not specified or limited
by express law, it shall not exceed Rs. 200. In default of payment of fine, the
court "shall sentence him (the offender) to imprisonment in the gaol for debtors,
"or in the criminal goal, according to the character and situation in life of the
"offender, until the fine be paid," provided that the imprisonment is not to exceed
two years. The Government wakil is to prosecute.

* See Regulation II., 1807. Repealed by (Madras) Act II., 1869.

† See Regulation V., 1831.

‡ See Act VI., 1844, which altered the rate of duty and repealed the whole Regulation except Sec. 2, which
rescinds the prohibition of import.

§ The whole of this Regulation was repealed by Madras Act II., 1869, (Repealing Act.) Meanwhile it had
been modified by Act XVII., 1840, and by Act VII., 1852.

|| Modified by Act VII., 1852.

Section 5 empowers the court to try such cases *ex-parte*, if the accused does not answer to his bail.

Section 6 makes proceedings liable to revision by superior criminal courts. Section 7 relates only to *stamp* laws. Section 8 declares the Act not to have retrospective effect.

20. In modification of Madras Regulation V., 1831, Act XVII., 1840, enacts that all penalties prescribed for breaches of salt laws shall be recoverable before the *magistrate of the district*,* provided that it shall be lawful for the magistrate to proceed as against a person charged with an offence the punishment of which rests with the criminal court; provided also that no magistrate shall under the authority of this Act punish any offender by a fine exceeding Rs. 50, or by imprisonment with or without labour for more than 30 days.

21. Act VI., 1844, is an act for, (among other objects), "determining the price at which salt shall be sold for home consumption" in the Madras Presidency. Section 2 rescinds Regulation II., 1818, except so far as it repealed a part of Regulation I., 1805.

Section 42 repeals Clause 2, Section 11, Regulation I., 1805.

Section 43† declares that from 1st April 1844 the monopoly price shall be Rs. 1-8-0 per maund of 3,200 tolahs' weight of salt.

Section 44 reserves to the Governor-General in Council a power to grant a remission of the price specified in the last preceding section, when the grant of such remission may appear expedient.

Section 45 permits salt which has paid full Madras price to be conveyed by sea from one Madras port to another. The schedule imposes an import duty of 3 rupees per maund of 80 tolahs to the seer. (This duty was however executively reduced to 12 annas. The history of this and subsequent changes will be found further on.)

22. Act VII., 1852, allows heads of district police‡ to hear and determine cases of offences against the salt laws when the value of the salt in question does not exceed 5 rupees, and to inflict punishment not exceeding 10 days' imprisonment with labour, or a fine not exceeding Rs. 3, commutable, if not paid, to imprisonment with labour for a period not exceeding 10 days.

Section 2 directs the head officer of district police, if he thinks the above punishment insufficient, to refer the case to the magistrate, who may either issue orders in writing to the head officer of police to inflict such punishment as the magistrate deems right "not exceeding that declared in Act XVII., 1840," or may send for parties and witnesses.

Section 3. If within 30 days from despatch of reference no answer be received, the offenders are to be discharged.

Section 4. Head officers of police are to report all cases of punishment inflicted.

23. (Madras) Act III., 1865, § authorised every magistrate to take cognizance of any offence committed within his local jurisdiction against any special or local laws then in force; provided that no magistrate should inflict a punishment exceeding his ordinary powers of punishment.

* Modified by (Madras) Act III., 1865.

† Repealed by (India) Act XIX 1866.

‡ Equivalent to *tahsildars* at the present day.

§ Repealed by (India) Act XIV., 1874, (Repealing Act).

24. (India) Act XIX, 1866, raised the price of salt to Rupee 1-11-0 per maund, repealing Sec. 43, Act VI., 1844.

25. The "Madras Repealing Act, 1869," repeals, subject to certain general reservations, a number of enactments deemed to have ceased to be in force otherwise than by express and specific repeal, or to have, by lapse of time and change of circumstances, become unnecessary. The schedule contains the following laws or portions of laws relating to salt:—

Regulation I., 1805, Sections 2, 12, 20; so much of Clause 1 of Section 8 as provides for the fine being levied under the rules for enforcing decrees; so much of Clause 4 of the same section as empowers the Governor in Council to countermand the sale of land; and Section 23;—

Regulation II., 1818, so much as is not repealed;—

Regulation V., 1831, (so far as salt is concerned), the whole.

26. In 1869 the Act cited in the margin, (which repeated a previous "ordinance"), raised the price of salt to Rs. 2 per maund.

27. (India) Act X., 1874, enabled the Governor-General in Council to raise the price of salt in Gaujam to anything not exceeding Rs. 2-4-0, while (India) Act XI., 1875, empowered the same authority to impose upon salt manufactured or sold within any local area a *duty* not exceeding Rupee 1-13-0. This done, the Local Government was to fix as part of the *price* such additional sum as it should deem sufficient to cover the cost of importation, purchase, manufacture, storage, transport, sale and wastage. This additional sum may be varied for any kind of salt or for any part of a local area with reference to (a) the place where the salt is sold, (b) the quantity sold in one transaction, (c) any other circumstance affecting its sale.

28. The Madras Salt Excise Act, 1871, is permissive, and, as it has not yet been extended to any district, need not be analysed in what is intended to be a brief summary of the practical effect of the law. We shall have to notice it elsewhere.

29. We now proceed to sketch briefly the agency by which the salt revenue was administered, and will first consider the higher agency. The administration of the salt revenue was, by Regulation I., 1805, placed in the hands of Collectors in communication with a General Agent, whose position does not seem to be very clearly defined. In May 1808 the office was abolished, though the section making his appointment obligatory was not repealed till 61 years afterwards. The revenue since then has been administered by Collectors in direct subordination to the Board of Revenue. At first, Collectors and their Head Assistants were allowed a commission of 1 per cent. and $\frac{1}{2}$ per cent., respectively, on the salt revenue realised. This plan was done away with for a time* and then re-introduced; but it was finally abolished in 1836.

30. In 1852 the Court of Directors suggested whether it would not be advisable to have a separate officer in charge of *abkari* and salt; but the Board was of opinion, and the Government of Madras agreed, that what was wanted was a better paid subordinate establishment and the appointment of a special uncovenanted assistant to aid each Collector in dealing with salt administration. Mr. Flowden, too, very distinctly proposed the appointment of a special officer, independent of Collectors, but the Government of Madras still thought the appointment of special Salt Deputy Collectors sufficient. Though the Board had opposed the suggestion of the Court of Directors as noticed above, they began to feel not long afterwards that some further measure was necessary, and in 1860 they proposed the appointment of an Inspector-General. This officer was to be strictly what his name imported, the executive control remaining with Collectors. Government approved the suggestion, but as Mr. Clarke, a Member of the Board of Revenue, had just been deputed on a special tour through the salt districts, they took no immediate action beyond authorising Mr. Pelly to include the appointment in his scheme of revised salt establishments, from which, however, it was afterwards struck out, on the ground that the establishments proposed were strong enough without it. Government also

* From 1812 to 1817.

suggested that the administrative charge of salt revenue should be placed in the hands of one member of the Board, (Mr. Clarke at that time), who could dispose of all executive matters, reserving questions of principle for discussion before the full Board. It does not appear that this suggestion was ever adopted.

31. In the beginning of 1872 the services of Dr. Rattron were placed at the disposal of the Board of Revenue with a view to the scientific inspection of the various salt works. Dr. Rattron has visited and reported on every station and is at present engaged in an experiment in salt-working in South Arcot. But, generally speaking, as said before, since 1808 the administration of the salt monopoly has remained in the hands of Collectors in immediate subordination to the Board of Revenue.

32. In 1852, however, the large transactions at Madras had made it necessary to assign to the Collector of that district the services of a special uncovenanted assistant. In other districts the Head Assistant Collector had generally been the right-hand of the Collector in salt matters. But in 1860 a special Deputy Collector for salt work was placed under the orders of each Collector, except in Godavery and Malabar, where the duties were lighter than ordinary. A Salt Deputy Collector has, however, subsequently been sanctioned for Godavery, and since 1875 a Deputy Collector has been attached to the Malabar district for combined salt and sea-customs duties.

33. The insufficiency of the subordinate salt establishment in the Northern Circars was prominently brought to the notice of Government by the Commissioner who, in 1854, had charge of the revenue administration of those districts. The lower grades were ill paid and dishonest, and, as a makeshift, certain places of manufacture were abolished and a better scale of pay arranged. But it was admitted that in all districts the establishments needed revision, and Government called for a detailed report. Nothing, however, appears to have been done till 1860, when, at the same time with the appointment of special Salt Deputy Collectors, a general revision of salt establishments was undertaken by Mr. Pelly, Member of the Board of Revenue. The scheme elaborated by that officer and sanctioned by the Government of India in 1863 is, in all main points, that now in force. The details of the existing establishments will be shewn elsewhere, but the general plan followed may here be briefly described. Each separate group of pans or salt works with a sale depôt attached to it constitutes, as a rule, a salt station. One, two, or three such stations constitute a *division* under charge of a Superintendent with one or more assistants and an establishment of clerks, a cashier and a number of weighmen, peons and "vettians," (whose duties it is not easy to distinguish from those of peons). The rates of pay are as follow:—

	Rupees.	
Superintendents.....	50—125	(Special salary of Rs. 200 allowed to Madras Superintendent.)
Assistant Superintendents.....	15—35	
Clerks.....	15—20	
Cashiers.....	10—15	
Measurers.....	6	
Peons.....	6	
Vettians.....	5—6	

When the division contains more than one "station," each subordinate station is placed under charge of an Assistant Superintendent with a small establishment, under the general control of the Superintendent of the division. The districts of Chingleput, South Canara and Malabar, and the station of Negapatam, so far as Vedaranyam salt is concerned, do not, however, strictly conform to this pattern, as in Chingleput the salt of six divisions is conveyed for sale some distance to the depôts at Madras and the pan-salt of Vedaranyam is similarly taken to Negapatam, while in Malabar there is no local manufacture, and in South Canara but little.

34. It will be observed that the establishments as now subsisting include no guards. For, before Mr. Pelly proceeded to the revision, the duty of guarding pans and platforms had been taken over by the regular police. The actual strength and cost of such establish-

ments will be shewn elsewhere. A successful experiment was made in the Ganjam district in 1873 by enlisting the services of the Gumsur Hill Palks as the extra force necessary at the salt works during the manufacturing season. But in Vizagapatam the men of the same class refused to enrol themselves for this work.

35. We proceed to give a brief sketch of the rates at which the tax upon salt has been levied from time to time.

36. The monopoly price was at first fixed at 20 pagodas or Rupees 70 the garce, or, (assuming the garce as equal to 120 maunds, an assumption by no means accurate till weighment was finally introduced), Rupees 0-9-4 the maund. The monopoly price then and since, as a general rule, included both the cost to Government of manufacture or purchase and import, and the duty. It would be impossible now to say how much of the total sum realised in each year was cost of salt and how much clear revenue. The question of the cost of salt to Government of late years is elsewhere discussed, and we shall here simply give a narrative of the gross price charged.

37. That price was in 1809 raised to Rupees 105 per garce or 14 annas a maund and remained at that rate till 1820. During this period, (in 1819), a practice was introduced of permitting a trader who took a whole 10 garce heap as it stood, to get it for Rupees 1,000 instead of Rupees 1,050. This seems to have been rather in the nature of a trade discount than an allowance for wastage, inasmuch as the Collector was authorised to fix a rate of wastage for a whole platform on an examination of particular heaps, and the reduction of 5 rupees out of 105 was given to wholesale dealers over and above the wastage. The rate of discount has now become 5 per cent. and is made to include wastage, but at the time of its introduction it was essentially and entirely a reduction, (*pro tanto*), in the monopoly price of all salt sold wholesale.

38. In 1820 the monopoly price was again lowered to Rupees 70 the garce on the allegation that the higher rate had diminished consumption. Mr. Bayley, (para. 42 of the Memorandum), says that the Board in 1828 shewed that such allegation was based on a mistaken mode of educing the consumption, and that there had really been an increase in consumption of 21 per cent. There was indeed an increase in the so-called *home* sales, but not in the sum of the home and inland sales, as shewn by the figures given by Mr. Bayley himself in his Appendix C, and he has also explained that the home sales by themselves formed a fallacious test.

39. At any rate, the monopoly price was again in 1828 raised to Rupees 105 per garce. In 1844 it was for a short time enhanced to Rupees 130 the garce or Rupee 1-8-0 a maund, but the Court of Directors, on a remonstrance from the Government of Madras, reduced it in the same year to 1 rupee a maund, at which rate it stood till 1859.

40. The above is an accurate statement of the selling prices prevalent from time to time, (till 1859), on the Coromandel Coast. But the prices on the Malabar Coast did not conform to these rates. Thus we find that in 1821, Rupees 112 was charged for imported Bombay salt, and even for indigenous Malabar salt the price was Rupees 87-8-0 a garce, or Rupees 17-8-0 above the monopoly price then prevalent on the east coast. Afterwards a variation appears to have been made in the other direction, imported salt being sold at Rupees 70, and home-made Malabar salt at a price lower by the difference between the cost of the two kinds, carriage to place of sale included. But from 1824 the local licit manufacture in Malabar ceased to exist, and for the next 33 years the imported salt, on which the west coast chiefly depended, continued to be sold at the general monopoly price of the day, except at certain depôts on the Cochin frontier, whose case will be noticed below.

41. When, however, in 1856-58, the endeavour was made to withdraw from importation on Government account in Canara and Malabar, it became obvious that private trade could never gain a footing, so long as it had to pay a customs duty of 14 annas a maund while Government was selling salt outright at 1 rupee a maund,

minus 5 per cent. wholesale discount. Accordingly the rates given in the margin* were fixed, as being supposed to cover cost and carriage of salt and 14 annas a maund duty. Whether they actually did so or not we have enquired in our separate report on the west coast salt supply;—here we are merely concerned with the rates fixed.

42. In the years 1852-56 an experiment in the opposite direction had been made in Malabar by reducing the selling price of salt at certain depôts adjacent to the Cochin frontier to Rupee 0-9-2 on the coast, and Rupee 0-13-9 in the interior, because Cochin salt undersold our salt at the then rate of 1 rupee a maund. The result was not encouraging, inasmuch as, though more salt was sold at the frontier depôts, the increment displaced an equal amount of higher priced salt elsewhere, and the experiment was judiciously abandoned.

43. In August 1859 the general monopoly price was raised to Rupee 1-2-0 a maund, the established special rates in Canara and Malabar being similarly enhanced in each case by 2 annas, i.e., to Rupee 1-4-0 in Canara and Rupee 1-4-6 in Malabar, (for the stocks at the inland depôts had by this time been sold off).

44. On the 3rd April 1861 the selling price was further raised by 4 annas, i.e., to Rupee 1-6-0 a maund on the east coast and Rupee 1-8-0 a maund on the west coast. In fact, in Malabar an addition of 4 annas would have raised the rate to Rupee 1-8-6, but Rupee 1-8-0 was held to be the legal maximum selling price, as the law then stood. In the following June the monopoly price was raised to Rupee 1-8-0 on the east coast, and, as it was already supposed to be at its maximum in the western districts, the price throughout the presidency became uniform.

45. We may now bring up to the same date the history of the import duty and then proceed *pari passu* with both forms of impost. Regulation I., 1805, altogether prohibited importation of salt on private account. Regulation II., 1818, repealed so much of this prohibition as referred to imports by sea, but imposed a duty of Rupees 350 per garce, modified by the Customs Act of 1844 to Rupees 13 per maund, which amounted to a complete embargo. In 1854 the customs duty was reduced to 12 annas, but shortly afterwards raised to 14 annas on the assumption that, out of the monopoly price of 1 rupee, 2 annas represented cost and 14 annas duty. When, in 1859, the monopoly price was raised to Rupee 1-2-0, the import duty was similarly enhanced by 2 annas and stood at Rupee 1-0-0 a maund. And in April 1861 the import duty was raised to Rupee 1-4-0 a maund, except in Malabar, where the Board, to preserve the due difference between monopoly price and duty, (viz. Rupee 0-4-6), put the duty at Rupee 1-3-6. The matter was referred to the Government for orders, but was probably lost sight of in the immediately subsequent further enhancement of the monopoly price to 1-8-0, which was accompanied by a rise in the customs duty on both coasts to Rupee 1-6-0 a maund.

46. We now resume the joint history of monopoly price and customs duty from 1861. In March 1866 the monopoly price was raised to Rupee 1-11-0, the import duty to Rupee 1-9-0 per maund, and in October, 1869, under the financial exigencies of the time, the monopoly price was still further enhanced to Rupees 2-0-0 a maund, at which rate, except in districts peculiarly situated, it at present stands. In the Act of 1869 no mention is made of the import duty leviable on imported salt, but while, hitherto, 2 annas had been taken as representing the cost of manufacture, in the tariff Act of 1871 the rate of customs duty on salt is put down at Rupee 1-12-0, showing that the modified estimate of cost was now 3 annas. The point will be noticed more at length in the chapter of the report on cost of manufacture.

47. In 1874, as part of the scheme for abolishing a section of the inland customs line, and the preventive line between Madras and Orissa, power was given to the Governor General in Council

to raise the price up to a maximum of 2-4-0 a maund at the salt works in the Ganjam district, and accordingly the price was fixed at 2-4-0 at the Ganjam pans, and at 2-3-0 at those of Ichapore.

48. Finally, in the following year, the principle which in 1857-58 the local Board and Government had recognized as that which should properly govern the monopoly price on the west coast, but which in the various enhancements of the rate had been lost sight of and was now even denounced by those same authorities, was enforced by the Government of India, and in order to obtain the full rate of 1-13-0 per maund of duty, the selling price of home-made salt in South Canara was fixed at Rupees 2-2-0, and the price of imported salt in that and the neighbouring district of Malabar at 2-5-0 per maund.

49. Thus at present the monopoly rates per maund are,

Malabar and South Canara; salt imported by Government...	Rs.	2	5	0
South Canara; indigenous salt		2	2	0
Ganjam district;—Ganjam pans.....		2	4	0
Do. do. Ichapore pans		2	3	0
All other Government depôts.....		2	0	0

The above rates are, however, modified in practice in wholesale transactions, as mentioned above.

50. The import duty is throughout the Presidency Rupee 1-13-0 per maund.

51. The annexed statement shews in a rough way the monopoly price, the quantity of salt sold and the amount realised from the first beginning of the monopoly down to the year 1874-75.

An endeavour is made to distinguish the quantities sold, (a) for home consumption, (b) for inland consumption, (c) to French Government, and (d) for export, and the amounts realised by sales of each class, but it will be seen that it is only from the year 1857-58 that the intention is completely carried out. The years are Fashi years, i.e., from 1st July to 30th June, but for convenience sake the corresponding years of the European calendar have been entered; (thus 1806-7 A.D., instead of 1216 Fashi). Again, in the second column the several minor local variations of price already noticed above, (see paras. 40—44), except those specially legalised by the Acts of 1874 and 1875, are not entered. The figures, being for a different year, will not correspond with those shewn in Appendix B, e.g., while the total of home and inland sales for the last three official years shows a steady increase, the increment in the three last *fashi* years is interrupted; the averages however only differ by 14,161 maunds. But, even if the figures were for official years, they would not agree, since, except in the last two years (1873-74 and 1874-75), the present statement shews the gross weight supposed to be sold without the 5 per cent. deduction for wholesale transactions. Hence also it is that the amount entered in column 5b is not the price entered in column 2 multiplied by the number of maunds shown in column 5a. For instance, in the year 1871-72, the sales came to 65,63,122 maunds, but the realisations, (though the price was 2 Rupees per maund), did not amount to double that number of rupees. The deficiency is due to wholesale sales. In the years 1873-74 and 1874-75 the correction has been made. It must be remembered also that it was not till 1862 that weightment was finally determined upon. Hence, previous to that year, the reduction to a weight standard is of uncertain accuracy. Further, in the year 1862, North Canara was transferred to Bombay, so that the area supplied is less since that year, and, even apart from that change, it cannot be assumed that the area covered by home and inland sales is constant throughout the period. There have doubtless from time to time been fluctuations in the limits of the tracts to the north and east supplied by salt from Madras, and, since the extension of the railway, Bombay salt has driven back Madras salt in the Nizam's dominions. Still, with all these sources of error to be allowed for and in the absence of any trustworthy statistics of the growth of population, we think some analysis of the figures will not be void of use, especially as the Government of India in a letter, No. 190, dated 12th June 1875, to the Government of Madras, has distinctly asked whether the assertion that every increase of price has been followed by a decrease in consumption is borne out by facts.

STATEMENT of Salt sold and Revenue raised thereon in the Madras Presidency from 1806-7 to 1874-5.

1	2	3	4	5	6	7	8	9	10				
Year begin- ning 1st July.	Monopoly prices per Indian Maund.	Sales for Home Consumption.		Sales for Inland Consumption.		Down to 1822-53, this column shows the total of Sales for Home Con- sumption, for Inland Consumption, and Sales to the French Govern- ment. From 1823-54 the last is shown separately.	Sold to French Government.		Exported by Sea.		Miscellaneous Salt Revenue	Grand Total	REMARKS.
		a.	b.	a.	b.		a.	b.					
									Quantity.	Amount realised.			
1806-7	0 9 4	MDS.	RS.	MDS.	RS.	MDS.	RS.	MDS.	RS.	MDS.	RS.		
1807-8	0 9 4	...	...	2,871,120	...	957,960	...	3,829,080	19,91,429	...	...	...	
1808-9	0 9 4	...	...	3,631,000	...	1,333,440	...	4,964,440	24,29,194	...	...	...	
1809-10	0 14 0	...	...	3,721,560	...	1,399,680	...	5,120,640	25,73,516	...	...	...	
1810-11	0 14 0	...	...	2,858,330	...	1,153,000	...	4,016,830	25,29,222	...	...	...	
1811-12	0 14 0	...	...	3,319,800	...	1,194,320	...	4,456,220	29,40,413	...	...	...	
1812-13	0 14 0	...	...	3,157,920	...	1,550,640	...	4,707,960	29,51,313	...	...	...	
1813-14	0 14 0	...	...	3,297,560	...	1,292,580	...	4,600,440	32,14,834	...	...	...	
1814-15	0 14 0	...	...	3,227,850	...	1,376,160	...	4,628,640	30,58,410	...	...	...	
1815-16	0 14 0	...	...	3,038,280	...	1,330,640	...	4,369,600	27,72,923	...	...	...	
1816-17	0 14 0	...	...	3,062,520	...	1,393,880	...	4,456,400	28,65,990	...	...	...	
1817-18	0 14 0	...	...	2,790,720	...	1,341,600	...	4,132,320	26,21,119	...	...	...	
1818-19	0 14 0	...	...	3,291,600	...	1,453,520	...	4,745,120	28,59,133	...	...	...	
1819-20	0 14 0	...	...	3,373,530	...	1,603,720	...	4,977,250	30,44,898	...	...	...	
1820-21	0 9 4	...	...	3,435,264	...	1,125,572	...	4,560,836	29,85,675	...	...	...	
1821-22	0 9 4	...	...	4,492,734	...	413,664	...	4,906,398	27,82,069	...	...	...	
1822-23	0 9 4	...	...	4,517,340	...	1,069,636	...	5,586,976	30,54,705	...	...	...	
1823-24	0 9 4	...	...	4,635,060	...	947,935	...	5,582,995	29,42,105	...	...	...	
1824-25	0 9 4	...	...	4,691,540	...	1,057,185	...	5,748,725	29,47,933	...	...	...	
1825-26	0 9 4	...	...	4,670,670	...	1,036,415	...	5,707,085	28,56,783	...	...	...	
1826-27	0 9 4	...	...	4,176,027	...	729,194	...	4,905,221	31,89,664	...	...	...	
1827-28	0 9 4	...	...	4,555,973	...	794,494	...	5,350,467	28,20,585	...	...	...	
1828-29	0 14 0	...	...	4,728,011	...	1,522,182	...	6,250,193	30,55,339	...	...	...	
1829-30	0 14 0	...	...	4,200,514	...	630,393	...	4,789,837	27,47,450	...	...	...	
1830-31	0 14 0	...	...	4,449,553	...	655,820	...	5,105,373	26,14,619	...	...	...	
1831-32	0 14 0	...	...	4,116,337	...	601,113	...	4,717,450	24,39,769	...	...	...	
1832-33	0 14 0	...	...	4,155,039	...	568,290	...	4,723,329	25,12,291	...	...	...	
1833-34	0 14 0	...	...	3,562,203	...	1,350,255	...	4,912,458	24,53,628	...	...	...	
1834-35	0 14 0	...	...	4,253,709	...	4,380,274	...	8,633,983	41,92,351	...	...	...	
1835-36	0 14 0	...	...	4,135,327	...	1,680,380	...	5,815,707	27,70,352	...	...	...	
1836-37	0 14 0	...	...	3,833,320	...	699,174	...	4,532,494	25,96,737	...	...	...	

Year	1836-37	1837-38	1838-39	1839-40	1840-41	1841-42	1842-43	1843-44	1844-45	1845-46	1846-47	1847-48	1848-49	1849-50	1850-51	1851-52	1852-53	1853-54	1854-55	1855-56	1856-57	1857-58	1858-59	1859-60	1860-61	1861-62	1862-63	1863-64	1864-65	1865-66	1866-67	1867-68	1868-69	1869-70	1870-71	1871-72	1872-73	1873-74	1874-75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Quantity	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

The export in 1874-5 do not include 236,487 Ind. Maund expected from the newly to Malabar by contractors for Government, and the sum received from the contractor is excluded from the calculations.

52. The following table condenses the figures of sales as shewn in column 5a, (i. e., home and inland sales taken together), into averages, according to periods of uniform price.

Period.	Monopoly price per maund.			Average yearly sales in maunds.	REMARKS.
	H.	A.	P.		
1806-7 to 1808-9 3 years.	0	9	4	3,414,560	
1809-10 to 1819-20 11 years.	0	14	0	5,174,903	
1820-21 to 1827-28 8 years.	0	9	4	4,721,795	
1828-29 to 1842-43 15 years.	0	14	0	4,209,475	
1843-44 & 1844-45 2 years of transition.	0 1	14 8	0 0	4,202,647	
1845-46 to 1858-59 14 years.	1	0	0	5,034,433	In the last 6 years of this period the sales to French Government are not included. If they were added the average would stand 5,659,070.
1859-60 & 1860-61 2 years of transition.	1 1 1	0 2 6	0 0 0	5,966,166	
1861-62 to 1864-65 4 years.	1	8	0	6,296,599	In 1862, North Canara with annual sales of about 1½ lakhs maunds was lost to Madras.
1865-66 to 1868-69 4 years (transitional).	1 1	8 11	0 0	6,714,936	
1869-70 to 1874-75 6 years (transitional).	1 2 Rs. 2 to 2	11 0 0 5	0 0 0 0	6,501,638	In the last two years of this period net sales, i. e., after deduction of discount, have been given. If gross sales were given for those two years, the average would rise to about 6,593,000.

53. It appears from these figures that not only was the first increase of price accompanied by a decrease for the moment, but that the average of 11 years was lower than the average of the first 3 years. Similarly the reduction of price in 1820 was followed by an immediate and persistent increase of consumption amounting to 50 per cent., if we compare average with average. But the next enhancements did not shew similar marked results, and the average of the 14 years 1845-46 to 1858-59 with a selling price of Rupee 1-0-0 per maund yields a consumption higher than any before reached. Then, while the price rose from Rupee 1-0-0 to Rupee 1-11-0, the consumption steadily increased, and the last period of 6 years, during nearly the whole of which the minimum price has been Rupees 2-0-0, shews an average consumption of 6½ million maunds.

54. The exports by sea have largely fallen off since the abandonment of the monopoly in Bengal, but neither these exports nor the salt sold to the French Government have contributed much to the revenue, which shews a rise from 20 lakhs of rupees in 1806-7 to nearly 137 lakhs in 1874-75, or an increase not far short of sevenfold while the average consumption of the last 6 years compared with that of the first 3 included in the table exhibits an increase of 91 per cent.

14

157

55. The system of manufacture and sale as a whole is a subject that hardly admits of historical treatment and in its present aspect will be separately described. But it seems desirable to give a short narrative here of certain changes more or less important which have been introduced from time to time.

56. And first may be noticed the alteration in the number of points of manufacture. A salt *station* may be described as a group of pans occupying an area, generally in one village, approximately continuous. One such station may, and in most cases does, constitute a *division*. But when there are two or more such groups of pans in tolerably close proximity they are brought together as one division and placed under one superintendent. We have not attempted to trace the history of the points of manufacture further back than 1855.

57. The Statement facing this page shows the salt stations and divisions open at the end of 1855 and those open at the beginning of 1876, with the intermediate history of each district. The stations are numbered serially for each district, in Arabic numerals for the beginning, in Roman numerals for the end, of the period. The divisions, when they consist of more than one station, are shewn by brackets and all divisions are numbered in a continuous series for the Presidency, thus;—(31), (XXXI). In the column for remarks the relative positions of the head station and sub-stations of divisions containing more than one station are briefly explained. The divisions vary much in respect to concentration.

58. It will be seen that the change has chiefly taken effect in the reduction of *stations*. Their number has been diminished from 122 in 1855 to 81 in 1876, while the divisions still number 60 against the 63 of thirty years ago. Thus the change has been one mainly affecting the manufacturers, the area of production being concentrated at particular spots, and in a much less degree the buyers of salt, the foci of salt *trade* remaining much the same, or moving, on the abolition of one station, to another in very close proximity. The changes are slight in the three most northerly districts. In Kistna two stations out of six have been closed. In Neillore the number has been reduced from 25 to 12. In Chingleput, on the other hand, the stations have increased in number, altogether in the north of the district whence the Madras store is supplied. The great extension of manufacture in Chingleput due to the increased importance of Madras as the terminus of the railway system and a salt centre supplying a wider and wider area is obviously the sufficient cause of the multiplication of stations in this case. South Arcot, Tanjore and Madura shew a marked tendency to concentration of works, while Tinnevely and South Canara each exhibit a reduction of one station.

59. The process of concentration was mainly the result of the suggestions of Mr. Pelly and Mr. Clarke between the years 1860 and 1865. The instances in which stations once closed were re-opened are not many.* In a few cases, however, (*e. g.*, Ichapore in Ganjam), what appears as a first opening, may be the re-opening of a station closed before 1855.

60. There are still 57 divisions on the east coast of Madras along a sea-board of about 1,050 miles, or, on an average, one division to every 18½ miles. The average yearly production varies from 5,000 maunds at Pentakottah to upwards of 3,00,000 maunds at Nowpada and is on an average about 1 lakh of maunds, if one division be taken with another.

61. The next point which we have thought it important to trace, at least from the date of Mr. Bayley's memorandum, is the history of the various rates of kudivaram†, or payment to manufacturers, sanctioned from time to time. We therefore requested Collectors to furnish us with a narrative of rates from the end of 1855 for each

* 1 in Ganjam, 1 in Vizagapatam, 1 in Godavery, 1 in Kistna, 1 then re-extended, 2 in Tanjore and 1 in Madura—9 cases in all.

† We have used this word to avoid a periphrasis, which is needless.

South Arcot, (reduced and

salt station, and also to shew for every 5th year, (*i. e.*, 1855, 1860, and so on), the amount of salt stored, the amount of kudivaram paid therefor and the average rate per maund thence deduced. The Statement facing this page summarises the replies.

62. One very general cause of increase was the substitution of 424 mercals for 400 as the equivalent of a garce. This change, which amounted to the addition of about 1 anna in the rupee or more accurately 6 per cent. to the kudivaram, was carried out in some districts as early as 1856, in others not (apparently) till 1862.

63. Again, when Mr. Pelly was deputed to investigate the condition of salt establishments, he took occasion to point out the extreme variations in the rates paid to manufacturers even at the same station. In Chingleput especially was this variation remarkable, the rates ranging from Rupees 6 to Rupees 26½. Government referred the point to Mr. Pelly for further consideration, in conference with the general Board. Mr. Pelly then consulted all Collectors of saliferous districts and submitted a report to Government. He remarked that the established rates were as a rule lower in the northern than in the southern districts. Without, then, making a great change in any district, he laid down 5 rates* per maund and proposed to adjust the existing rates to these, generally by a slight increase. As a rule, 1 anna a maund was the rate he proposed for the northern districts,† the exception being the Ganjam division in the Ganjam district where 1½ anna was proposed on account of the heavier labour involved in working the Ganjam pans. Similarly 1½ annas was to be the normal rate in the southern districts, the rate of 1½ annas being, however, allowed in North Canara and the division of Negapatam in Tanjore, where labour was dear.

64. Part of Mr. Pelly's plan was also to define the duties which the ryot was to perform in consideration of the kudivaram. The practice on this head had been somewhat diverse and Mr. Pelly proposed to declare it the "duty of the manufacturer to attend to all works at the pans, (with the exception of repairing the *main channels*), necessary for the production of the salt, to convey his salt to the platform, to deliver it into the store, and that when he had done this there should be no further demand made on his time and labour."

65. But the rates payable at certain of the Chingleput (then Madras) and South Arcot pans stood on a different basis from those of other districts. As remarked by Mr. W. H. Bayley in his "memorandum" (para. 97):—"the rates varied according to the class of persons who held the land, whether brahmins, residents, strangers, pagoda people, inamdars, &c., so that several rates sometimes prevail in one kotar."

66. The following extract from a letter‡ from the Collector of Chingleput gives a fuller account of the matter and, though of much later date than Mr. Pelly's report, may be fitly introduced here, before we proceed to notice how the latter proposed to deal with the case of these two districts.

"The Government call for a tabular statement of all the rates of kudivaram current in the Chingleput district, as well as some explanation of the co-existence in the same district of a rate so low as Rupees 6 with one so high as Rupees 26-12-0 per garce."

* ½ anna per maund for swamp salt.
 1 anna
 1½ do.
 1½ do.
 1½ do. } do. do. for manufactured salt.

† *i. e.*, Ganjam, Vizagapatnam, Godavery, Kistna and Nellore.

‡ No. 517, dated 30th Nov. 1870, to the Board of Revenue, Madras.

Statement shewing the successive changes in the rates of salt and manufacturers' price from 1855 to 1876.

Divisions or (in some cases) Stations.	Rate per garce at close of 1855.	Narrative of intermediate changes.	Divisions or (in some cases) Stations.	Rate per garce at close of 1875.	REMARKS.	Divisions or (in some cases) Stations.	Rate per garce at close of 1855.	Narrative of intermediate changes.	Divisions or (in some cases) Stations.	Rate per garce at close of 1875.	REMARKS.
2	3	4	5	6	7	8	9	10	11	12	13
1. Ganjam	Rs. A. P. 5 0 0	1.—Raised to Rs. 3-0-0 in 1857; to Rs. 9-0-0 in 1858; to Rs. 9-6-0 in 1862 and to Rs. 11-0-0 in 1867.	Ganjam	Rs. A. P. 11 0 0 =(0 1 5½ per md.)	The average rates as worked out by the arithmetical test, with the prescribed rate at each station in each fifth year.	2. Masurkotta	Rs. A. P. 7 0 0	2.—Not open in 1857 when the 6 per cent. enhancement was carried out elsewhere in the district; raised to Rs. 9-0-0 in 1862; to Rs. 9-6-0 in 1863; afterwards closed. Ichepore opened in 1863 at Rs. 9-0-0.	Ichepore	9 6 0 =(0 1 3 per md.)	These rates remain unchanged.
3. Nowpada	3 0 0	3.—Raised to Rs. 4-4-0 in 1857; to Rs. 6-0-0 in 1858; to Rs. 9-0-0 in 1865.	Nowpada			4. Wameravilli	5 0 0	4.—Raised to Rs. 5-4-0 in 1857; to Rs. 7-8-0 in 1858; to Rs. 9-0-0 in 1866.	Wameravilli		Do.
All divisions	5 0 0	In 1860 raised to Rs. 6-5-0; in 1862 to Rs. 7-8-0; in 1866 to Rs. 9-0-0. In 1867 for a certain portion of the Binli-patam pans a special rate of Rs. 10-8-0 was sanctioned.	All divisions, except a specified portion of the Binli-patam pans. The excepted area at Binli-patam.	9 0 0 =(0 1 2½ per md.) 10 8 0 =(0 1 4½ per md.)	The average rates given by the arithmetical test are:— 1855—10½ pice per maund. 1860—10½ do. do. do. 1865—1 anna do. do. 1870—1 anna 2½ pice do. 1875—from 1 anna 1½ pice to 2½ pice, according to the quality of the salt.						At Markum the arithmetical test gives Rupee 9-1-3 per maund as the average rate in each 5th year; at Kundadu and Chumambat Rupee 6-1-11. At the stations closed in 1865 the average rate varied from Rupee 6-1-9 to 6-2-11 per maund. At other stations the actual amount paid agrees with the rate of Rupees 10-0-0 per garce. The origin of the various rates prevailing is explained in the text. They are most remarkable at Chumambat, where the letters (a), (b), (c), &c., refer respectively to (a) Kudipat, (b) Grama-sukharasi, (c) Sukharasi, (d) Davaethanam, (e) Kanimayam, (f) Kavihanyam, and (g) Nam holdings.
Both divisions	6 10 0 7 6 8 64	Raised in 1855 to Rs. 6-0-0, 7-0-0 and 7-7-0; in 1858 to Rs. 7-0-0 and 7-7-0; changed in 1861 to Rs. 6-0-0, 6-8-0 and 7-0-0; raised in 1862 to Rs. 7-0-0 and 7-8-0; in 1864 made uniformly Rs. 7-3-0, and in 1866, Rs. 10-0-0.	Both divisions	10 0 0 =(0 1 4 per md.)	The meaning of the two-fold three-fold rates of earlier years is not clearly explained, but it is to have had something to do with the difference between weighing and measurement. The arithmetical test gives an average of 11-6-8 pice per maund in 1860, 1 anna in 1865 and 3 pice afterwards.		10 10 0	In 1869 raised to Rs. 12-0-0 for the season, in consequence of the danger of short cut-turn. Lowered again next year to Rs. 10-10-0, at which rate Vedaranyam was opened as a manufacturing station in 1863. In 1864 rates raised to Rs. 15-0-0 at Negapatam, to Rs. 13-2-0 at Kovil-pat, and Rs. 11-14-0 at Naidavasal. In 1865 three rates according to quality, were substituted at Negapatam, viz. Rs. 9-0-0, 10-0-0 and 12-0-0. In 1866 the rate of Rs. 10-10-0 was sanctioned for the newly opened Tranquebar; raised next year to Rs. 11-14-0. In 1868 the rate at Vedaranyam was lowered to Rs. 8-0-0. In 1872 the varying rates at Negapatam were replaced by a uniform rate of Rs. 15-0-0. In 1873 the rate at Vedaranyam was again raised to Rs. 10-10-0, which rate was also sanctioned for Velangani when that station was opened in 1874. The rates for Velangani and Vedaranyam are exclusive of cost of conveyance to Negapatam.	Negapatam Division. Naidavasal and Tranquebar Divisions. Other Divisions.	15 0 0 11 4 0 10 10 0 =(0 1 5 per md.)	The figures of actual quantities made and sold paid to manufacturers give the following district average rates. 1855—Rs. 9 0 1 4½ per maund. 1860—, 0 1 6 „ „ 1865—, 0 1 3 4 „ „ 1870—, 0 1 7 „ „ 1875—, 0 1 6 „ „
1. Pandraka	1 7 4	1.—The salt here is semi-spontaneous. Raised in 1858 to Rs. 2-1-4; in 1862 to 3-12-0; in 1871 to Rs. 5-0-0.	Pandraka	5 0 0 =(0 0 8 per md.)	The rates for the three stations existing in 1855 were given. They were closed within two years from that time.						
2. Nizampatam	7 6 0	2.—Re-opened in 1860 at Rs. 7-8-0; raised in 1863 to 8-2-0, and in 1867 to Rs. 10-0-0.	All other divisions	10 0 0 =(0 1 4 per md.)	Pan salt was also once made at Pandraka, and a higher rate paid.						
3. Chinna Ganjam	7 6 0	3.—Raised to Rs. 7-7-0 in 1857; to Rs. 7-8-0 in 1858; to Rs. 8-2-0 in 1863, and to Rs. 10-0-0 in 1867. Manginapudy opened in 1863 at Rs. 8-2-0; raised in 1867 to Rs. 10-0-0.									
All divisions	7 8 0	This sum was charged for a measured garce of 400 merca of "brown salt," i.e., salt for inland trade (and for a weighed garce of 120 maunds of "white salt" i.e., salt for export by sea). In 1856 the rate for "brown salt" was raised 6 per cent., i.e., to Rs. 7-15-0. In 1865 all salt being now weighed, the distinction was abolished and the rate of Rs. 10-0-0 for 120 maunds introduced. An intermediate enhancement at some stations to Rs. 8-2-0 had, however, occurred, but is not noticed by the Collector.	All divisions	10 0 0 =(0 1 4 per md.)	The arithmetical test gives an average with the rate prevailing in each fifth year.		10 8 0	In 1856 raised 6 per cent., i.e., to Rs. 11-2-0-96. In 1862 to get rid of fractions raised to Rs. 11-4-0.	All divisions	11 4 0 =(0 1 6 per md.)	So far as records go, the arithmetical test gives results agreeing with the standard rate.
							10 0 0	In 1856 raised 6 per cent., i.e., to Rs. 10-0-7, and in 1862 to Rs. 10-10-0 to get rid of fractions.	All divisions	10 0 0 =(0 1 5 per md.)	The arithmetical test agrees.
							9 0 0 12 0 0	In 1859 a third rate, viz. Rs. 7-0-0, seems to have been introduced. But in 1860 both the lower rates were done away with and all salt paid for at the rate of Rs. 12-0-0. In 1862 the rate was raised to Rs. 13-2-0. In 1863 and again in 1875 an allowance of Rs. 1-4-0 and 2-8-0, respectively, was given for salt from certain pans on the ground of distance. This allowance is still given in addition to the enhanced rate of 3 annas a maund or Rs. 22-8-0 per garce, sanctioned in October 1874.	All divisions	22 8 0 (plus 4 distance allowance in the case of certain pans.) =(0 1 0 per md.)	The arithmetical test gives the following district averages. 1855—Rs. 9 0 1 6½ per maund. 1860—, 0 1 8 31 „ „ 1865—, 0 1 9 „ „ 1870—, 0 1 9 39 „ „ 1875—, 0 2 0 56 „ „ The slight variations from standard rates in 1870 and 1875 are due to the extra allowance on certain pans noticed in column 4.
Northern divisions. Vadasammanjeri. Covelong	10 9 7 11 13 0 12 6 8 12 7 0 21 10 0 22 0 0	Raised in 1870 to Rs. 12-0-0. The rate of Rs. 12-6-8 raised to Rs. 13-3-0 in 1868.	Northern divisions. Vadasammanjeri. (Covelong	12 0 0 =(0 1 7½ per md.) 11 13 0 12 7 0 13 3 0 21 10 0 22 6 0 13 3 0 6 5 0 15 7 0 22 5 0 22 6 0 20 12 0	The origin and meaning of various rates are explained in text of the report. The average rate of Kadiyaram on the salt stored at Madras was as follows: 1856 to 1860 R. 0-1-5 per maund. 1861 to 1865 „ 0-1-5 „ „ 1866 to 1870 „ 0-1-5 „ „ 1871 to 1875 „ 0-1-7 „ „ At Home's Gardens depot the average rates varied from R. 0-1-7 to R. 0-1-7½; at Covelong from R. 0 1 9 2 to R. 0 1 0 1; and at Cheyur from 0 1 11 14 to 0 2 2 2.						
Cheyur	15 7 0 22 5 0 22 6 0 20 12 0	These rates are given, but they were probably not strictly in existence at the close of 1855. They were introduced in 1856 and exceed the rates of 1855 by 6 per cent. plus fractions added to avoid pice.	Cheyur								

"The rate of kudivaram for all the pans north of Madras has been raised to the uniform rate of Rupees 12. The rates at the southern pans are given below:—

Names of places where salt is manufactured.	Denomination under which the pans are known.	Number of pans.	Rate of kudivaram per garce.		
			RS.	A.	P.
Cheyur	Kudipat...	40	6	5	0
	Sarasari or Gramasukhavasi ...	6½	15	7	0
	Samudayam or Kani manyam ...	1½	26	12	0
	Inam ...	1	22	6	0
	Sukhavasi ...	68½	22	5	0
		117½			
Covelong	Mamulvaram ...	340	13	5	0
	Fakir manyam ...	2	22	6	0
		342			

"In his letter of the 17th May 1854, Mr. G. H. Ellis, the then Officiating Collector of this district, (vide pages 250 and 251 of the Appendix to Mr. Plowden's Salt Report), gives the reasons for the existence of these rates as follows, and furnishes a statement showing the rates of kudivaram that then prevailed in this district:—'These rates were, on the introduction of the monopoly, fixed in reference to the profits previously derived by the parties from the manufacture, consisting of the *varam* or share which they receive from the proceeds of the salt, and, like the ryot's share on paddy cultivation, varied not only at different localities, but in different pans at the same station according to the situation of the parties by whom they were severally held at the time, whether mirasidars, payakaris, or pagodas and charitable institutions. The prices realized for the article likewise fluctuated according to the quality of the salt raised, and the facilities of communication with the respective depôts which then existed. Annexed is a list of the different rates of kudivaram which are now in force in this district, and of the extent of pans under cultivation under each class.'

Names of places where salt is manufactured.	Denomination under which the pans are known.	Number of pans.	Rate of kudivaram per garce.		
			RS.	A.	P.
1.—Chunambat	Kudipat	25	6	9	1½
	Gramasukhavasi	8½	15	4	10½
	Sukhavasi	35½	16	4	6½
	Devasthanam	4	21	1	11½
	Kani manyam	1½	24	10	8½
	Kavil manyam	½	18	7	0½
	Inam	1	15	5	10½
		76½			
2.—Cheyur	Kudipat	40	5	15	0½
	Gramasukhavasi	6½	14	9	0½
	Sukhavasi	53½	21	0	9½
	Kani manyam	1½	25	3	2½
	Inam	1	21	1	7½
	Kudimanyam	5	...	...	...
	Devasthanam	9½	21	1	11½
		117½			
3.—Covelong	Mamulvaram	220½	13	2	8½
	Fakir inam	2	21	1	6½
	Karumbadi varam	...	10	0	0
		222½			

"From this extract it will be seen that the rates were fixed on the introduction of the salt monopoly in 1805. When it was proposed to establish this monopoly, the Board, in their letter to Government, dated 28th June 1804, (*vide* page 158 of the Appendix to Mr. Plowden's Report), opposed the scheme on the ground that 'the interference with the hereditary privileges enjoyed by mirasidars, which the introduction of a monopoly would render necessary,' presented a very serious objection to the measure."

"Mr. Falconar, however, who was a Member of the Board, was of a different opinion and argued that the rights of the mirasidars or of any other privileged manufacturers, might easily be commuted at the price of salt in the market, (*vide* page 318 of Appendix to Mr. Plowden's Report).

"This view prevailed, and when Regulation I. of 1805 was passed, the shares hitherto enjoyed by the mirasi manufacturers appear to have been commuted into money at the market price of salt.

"These rates were thus fixed with reference to the profits up to that time enjoyed by the mirasidars, inamdars, sukhavasi and other ryots, and varied with the shares which these different classes of manufacturers were entitled to, out of the whole quantity of salt made by them. What these different shares were, will be seen from paragraphs 5, 6, 7 and 8 of Mr. Hepburn's report to the Salt Agent, dated 20th January 1806.

"On a reference to these statements, you will find that the manufacture of salt has hitherto been carried on in twenty-four different Circar villages in this district. As the mirasi tenure obtains universally in the district, it also extends to the manufacture of salt, and, from the great variety of rates at which the people are remunerated for their labour in the manufacture, in general five or six different rates obtaining in the pans of the same village, has rendered it exceedingly tedious and difficult to reduce them to the regular form of a statement. For reasons which will be hereafter given, it is proposed to reduce the number of places of manufacture to five, namely, Cheyur, Chunambut, Covelong, Vallur, and Attiput. I shall therefore, as an example of the nature of mirasi tenure in the manufacture of salt, explain the different rates and modes of their remuneration to the inhabitants of these five pans for your information.

"In Cheyur, there are forty particular pans to prepare and cultivate, to which 16¹/₂ people are appropriated, which is four labourers to a pan. Of all the salt produced from these pans, the inhabitants' varam or share amounts to only 15¹/₂ per cent., but in order to make up the difference to them for this low rate, they enjoy 90 cawnies of paddy land in the village rent-free, and their labourers about 13 cawnies of backyards, for which also they pay no rent. The same mirasi inhabitants receive as their share of all the salt produced by their labourers in the other pans of the village to which no manyams belong, 60 per cent., excepting eight particular pans in the village cultivated by them on account of Brahmans and Pagodas, on which the inhabitants receive as their share 66²/₃ per cent., and again two other pans called kari manyams, from which they are paid 83¹/₃ per cent. Independent of this, the inhabitants' servants are entitled to a certain quantity of salt after it is manufactured, originally intended for the consumption of their own families and paid daily. Custom has, however, changed this into an annual quantity of eighteen garce of salt, which, being a determined quantity, is easy to be commuted in money upon the new plan.

"In Chunambat there are also, as in Cheyur, 33¹/₃ particular pans cultivated by 13¹/₃ labourers, which is four people per pan. On these, the varam is only 18 per cent., but in addition they enjoy 45 cawnies of nunjah or paddy ground, and 99 cawnies of punjah or dry grain ground, in all 144 cawnies of manyam for which they pay no rent. For all salt produced in the other pans, the people are entitled to one-half or 50 per cent. share, excepting in [?] one and a half pans kari manyams where their varam is 83¹/₃ per cent. Besides this, the inhabitants' servants also receive a proportion of the salt after it is manufactured. This is not, however, a fixed quantity, as in Cheyur, but is regulated by the number of persons employed, and amount on an average to about six mericals a year to each labourer employed. It is capable of commutation also, but cannot be determined with so much certainty as in Cheyur. The average amount for these last five years is Pagodas 189-3-70 per annum. There is also another allowance paid out of the sales to the inhabitants' servants called kalavasam. It is given in money and amounts on an average of the last five years to Pagodas 25-36-12. This does not obtain in Cheyur, probably from the inhabitants' servants being allowed backyards rent-free, which they have not at Chunambat. The amount of this must also depend upon the number of garces sold.

"At Covelong, occasioned probably by the peculiarity of its situation, there being little or no cultivating land in the neighbourhood, no manyams are attached to the manufacture of salt, and the inhabitants used to receive 60 per cent. for all salt produced by them, which Mr. Place reduced to 50, and it has continued so ever since. The inhabitants are also entitled to kari manyams, but the amount is trifling, being only Pagodas 18-10-5 a year. In Tycor, a small hamlet dependent upon Covelong, the inhabitants used formerly to enjoy 100 cawnies of

of teacal or garden ground rent-free on account of their manufacture of salt, but Mr. Place assessed it with 20 per cent. revenue, leaving 80 per cent. to them. Their possessing this and, however, makes no alteration in their varam upon the salt."

"The different shares referred to in the above paragraphs having been commuted into ready money, the manufacturers appear to have been paid up to 1821 according to the rates stated below, as will be seen from paragraph 4 of Mr. Smalley's letter to the Board, dated 14th June 1821. In this letter Mr. Smalley recommended an increase of Rupees 2 to the kudivaram in the northern, and of Rupee 1-4-0 to the rates in the southern pans. In making this recommendation, he observes that the rates of varam are very different, but that it would be better to raise the rates generally following up the old rates, as there would be either some good reason for the difference or in long established custom (*sic*), from which it is safest not to depart."

Names of the pans.	Rates and description of varam.	Amount of varam of each description per garce.	Average* of each village.
Cheyur ...	Kudipat ...	4 11 1	17 8 7
	Sukhavasi mirasidars of the village ...	13 5 2	
	Sukhavasi mirasidars or other people of the other villages ...	19 12 9 ⁵ / ₈	
	Churches (<i>sic</i>) ...	21 1 1 ¹ / ₂	
	Kari manyam ...	25 3 9 ¹ / ₂	
	Inam manyam ...	21 1 7 ¹ / ₂	
		105 3 5 ¹ / ₂	
Chunambat ...	Kudipat ...	5 5 1 ¹ / ₂	16 5 10 ¹ / ₂
	Sukhavasi mirasidars of the villages ...	14 10 10	
	Sukhavasi mirasidars or other people of the other villages ...	15 0 6 ¹ / ₂	
	Kari manyam ...	24 10 8 ¹ / ₂	
	Inam do. ...	15 5 10 ¹ / ₂	
	Kavil do. ...	18 7 1 ¹ / ₂	
		Devasthanam ...	21 1 1 ¹ / ₂
		114 9 2 ¹ / ₂	
Covelong ...	Mamulvaram ...	11 14 8 ¹ / ₂	13 14 8 ¹ / ₂
	Karunbadi varam ...	8 12 0	
	Inam manyam ...	21 1 6 ¹ / ₂	
		41 12 2 ¹ / ₂	

"This increase was sanctioned by Government in July 1821.

"The rates as then increased are the same as those given in Mr. G. H. Ellis' letter above quoted, and appear to have remained unaltered till the passing of the Board's order, dated 18th July 1856, which fixed the value of 120 maunds in weight as equivalent to 424 mericals by measurement and increased the then existing rate of kudivaram to the manufacturers by 6 per cent. per garce. The rates thus raised are given in the tabular statement† annexed to paragraph 2; and are those now in force.

"The great variety of rates which has been pointed out as prevailing in this district, is also to be found in the Chunambat pans now attached to South Arcot. I have therefore thought it advisable to trace the origin of those rates also. This information will be found in the quotation from Mr. Hepburn's report given above.

"In Cheyur as well as in Chunambat, the manufacturers in receipt of so low a rate of kudivaram as Rupees 6 were remunerated by manyams which they continue to hold. The Cheyur manufacturers are in the enjoyment of the 90 cawnies of inam land referred to in paragraph 6 of Mr. Hepburn's report. These inams, as well as those enjoyed by the kudipat manufacturers of Chunambat, have been confirmed by the Inam Commissioner free of tax as

* These averages, from the mode of calculation, are obviously worthless.

† The first table on page 19 above.

service grants given as remuneration for working salt-pans, so long as the condition attached to the grants is fulfilled; and title-deeds have been issued accordingly.

"There are besides two pans in Covelong, the kudivaram of which is Rupees 22-6. These pans are not mentioned in Mr. Hepburn's report of 1806. They were, however, brought to the notice of the Board in the letter from the Head Assistant Collector in charge, Mr. W. B. dated 23rd March 1817, and the manufacture of salt at them was sanctioned by the Board in their letter dated 29th May 1817."

67. In dealing with these rates Mr. Pelly proposed to treat separately the mirasī* privileges which were represented by the favourable rates. He recommended an enquiry into "each man's" claim to compensation, and that compensation, framed "on the basis of a calculation of the difference between the rate now to be allowed and the rate hitherto given, be made, when fairly claimable, to the mirasīdar, a certain sum being fixed on an average of a few years, to be paid annually or once for all and debited to the head of compensation in lieu of resumed privileges, &c." The quantity of salt manufactured in Madras (now Chingleput) at privileged rates was about 71,000 maunds, and in South Arcot less than that amount.

68. Orders on Mr. Pelly's proposals were for a time postponed, as they implied the introduction of a system of weighing, change then only in process of being carried out. But in orders No. 1043, dated 12th May, 1862, Government disposed of the question thus. While approving generally of Mr. Pelly's scheme, they did not think it necessary to tie themselves down to his rates. They therefore laid down the following table:—

District.	Division.	Per Garca.			Per Maund.		
		R.	A.	P.	R.	A.	P.
Ganjam.	Ganjam	9	6	0	0	1	3
	Other divisions	7	8	0	0	1	0
Vizagapatam	All divisions except Pandraka	7	8	0	0	1	0
Godavery							
Kistna							
Nellore	"Tada, &c."	8	2	0	0	1	1
	"Kistnapatam, &c."	7	8	0	0	1	0
† South Arcot	Tyagavalli	7	8	0	0	1	0
	Killai	8	12	0	0	1	2
	Cuddalore	8	12	0	0	1	2
Tanjore	All divisions except for spontaneous salt	10	10	0	0	1	5
Madura	"	11	4	0	0	1	6
Tinnevely	"	10	10	0	0	1	5
Canara	"	13	2	0	0	1	9

* It appears that it is inaccurate to class all these privileges as "mirasī."

† There was some mistake about South Arcot, as already in February, 1860, the rate at the divisions named had been raised to Rs. 12 per garca, on the ground that the rates were low as compared with those prevalent in Merkanam on the one side and in Tanjore on the other, and "on the distinct understanding that good salt is the 'insisted on, and an inferior article invariably destroyed." This enhancement is afterwards described by Salt Dept. Collector Muhammad Yusuf as "an act as liberal on the part of Government as it was unexpected by the ryot." The mistake was afterwards (1862) pointed out by the Collector and the rate of Rs. 10-0-0 allowed to stand.

the table did not include those stations in Chingleput and South Arcot where special rates existed, and in regard to these the Collectors were to report to Government the advantage of fixing a price for swamp salt. The effect that, though in some districts duties were exacted which the ryots could not legitimately be called on to perform, yet from scarcity of labour they could not be altogether excused, and that the proper remedy was therefore to pay them. "The manufacturers are bound at their own expense to keep the minor channels and pans in proper order, to deliver the salt into store, to keep the fences round the pans in repair and to guard the pans during the season of manufacture. They should be required also to provide labour for covering the heaps and repairing the platforms, main channels and other works at the stations, receiving payment for such duties. From escorting treasure, taking part in the sale of salt and guarding the platforms, they should be wholly relieved. These concessions, it may be remarked, operate indirectly as an enhancement of the price paid for the salt. This consideration will not be overlooked by the Board if applications are received for enhanced prices." For in laying down the list above enacted, Government contemplated the possibility of higher rates being rendered necessary by special circumstances.

70. The Government Order was circulated to all Collectors of coast districts and the Collectors of Madras (Chingleput) and South Arcot were directed to report specially on the question of privileged rates. Those officers replied respectively in May and June 1862, but their letters were overlooked for some time in the Board's Office.

71. Mr. Cunliffe, Collector of Madras, observed that mirasī privileges consisted in the right (1) to receive a special rate of remuneration, and (2) to have the right of taking new pans when manufacture was extended. In the pans south of the river, the second part of the right had never come into operation, since the existing pans even had not all been kept at work. In the pans to the north, the right had been disregarded, without complaint on the part of the mirasīdars, who, however, always received a share of pans in case of any extension. Mr. Cunliffe thought the right existed nevertheless.

72. The Collector of South Arcot forwarded a paper by Deputy Collector Muhammad Yusuf showing that the history and circumstances of the Merkanam pan-holders were quite different from those of the pan-holders in the south of the river. The Merkanam mirasīdars were or claimed to be the representatives of the original settlers, belonging to "the Mudaliar caste, generally known by the name of Kondacutle (sic) vellalers." To encourage them, grants of land had been made by the Government, and though their privileges had been curtailed by the Nawabs of Arcot, they still remained valuable and under the British Government's monopoly of the form of privileged rates of kudivaram. These rates Muhammad Yusuf said that Government was bound to continue. As to the pans in the southern divisions, Gandalam, Tyagavalli and Killai, the Deputy Collector maintained that mirasī right never existed in them. Yet in the same paragraph he speaks of the pan-holders as possessing the rights of "a mirasīdar or any cultivator of common grain in respect of transfer and sale." What he meant was probably that the pan-holders in the south were not entitled to any special rates, but had the right of

the Board, as already remarked, overlooked the papers for some time before they reached them till 1865. In the order then passed by Government the rate of the Merkanam division and the southern pans of South Arcot was fixed, and the case of the whole district was treated as disposed of by fixing Rupees 10-0-0 as the rate of kudivaram. This was the rate which left the Chingleput special rates undisturbed, and the Merkanam too, for the special rates subsist there

74. In 1869 the Board came up with a proposal to raise the northern pans of Chingleput from Rupees 10-9-7 to Rupees 12-0-0. Increase was sanctioned on grounds which will be noticed further on. The Government took the opportunity to ask for a further report on the various rates throughout the district. These varying rates were the rates in force at the pans, and Mr. Blair's full account of them has already been extracted. The subject concluded thus:—

"Having shewn the cause of the existence of the various rates of kudivaram in the district, it remains to consider whether it would be fair to reduce the several rates to an average or to close those pans at which the price is apparently extravagantly high, as proposed by Government.

"As the Government have agreed to take salt at certain prices equivalent to the profit obtained by the pan-holders before the passing of Regulation I. of 1865, and as these prices are guaranteed by Section 4 of that Regulation, I am of opinion that the rates cannot now be altered without the consent of the manufacturers. Even if these rates had not been guaranteed, I should question the policy and justice of altering them after they had been in existence for upwards of 60 years. Neither do I think it advisable to abolish the pans, as this measure would involve the payment of a heavy compensation to which the manufacturers would be entitled under Section 5 of Regulation I. of 1865.

"Under these circumstances, I beg to recommend that the rates at the southern pans be left undisturbed."

75. The order of the Board thereon was as follows:—

"In this letter, the Acting Collector of Chingleput replies to paragraph 3 of Government Order calling for a statement of the rates of kudivaram current in the district with the reasons for variations in them. Those for the northern salt stations, as in the order cited being converted into a uniform rate of Rupees 12, Mr. Blair comments on his report to the southern stations of Cheyur and Covelong.

"At the former station, the rates vary from Rupees 6-5-0 to Rupees 26-12-0, average being Rupees 16-8-5; and at the latter there are only two rates, Rupees 13-3-0 and Rupees 22-6-0, average Rupees 18-4-3. The average for the two stations is Rupees 14-1-3.

"As shewn by the Acting Collector, the variation in the rates is explained by the fact that when they were fixed the arrangement was made with the owners of salt pans having right to manufacture salt. Thus the nominally low rates allowed in some pans were supplied by grants of land. Looking to the care with which the rates were originally fixed, the peculiarity of the tenures in the Chingleput district, the small proportion which kudivaram bears to our increasing salt revenue, the fact that the demand for salt is sufficient to employ all the pans, and the difficulty of assigning compensation to the owners of pans which might be closed, the Board, in concurrence with the Acting Collector, do not think that any change is called for, either in the existing rates of kudivaram or the pans at present use.

76. Government concurred and the at first sight anomalous rates prevail to the present day at the southern Chingleput pans, even as at the pans of the Merikana division in South Arcot. Having now disposed of the case of these exceptional districts or parts of districts, we may go back to the general history of the rates elsewhere.

77. Since 1862 there has been considerable increase in the rates in the more northern districts on the east coast, and in Canara but in the southern Coromandel districts the rates, which in those districts were markedly higher, have not, as a rule, been altered. Certain pans in Tanjore, however, form an exception.

78. In the Ganjam district the rates have been raised from Rupees 11-0-0 per garce at the Ganjam pans to Rupees 7-8-0 to Rupees 9-6-0 at the other pans. The enhancement of the rate at Ganjam took place in 1867. It was first sanctioned temporarily for one season on the ground that persons accustomed to undertake the manufacture had died in famine, that the then monthly earnings of the salt makers and higher wages could be got elsewhere, and that not enough salt made. The enhanced rate was afterwards made permanent.

canal should be completed. In 1870 the Board recommended that the rate should be made permanent, because the manufacture of salt at Ganjam was already too restricted and 15 Rupees a garce was actually being paid at certain Pooree pans within 32 miles of Ganjam. Government sanctioned the permanent enhancement of the rate to Rupees 11. The Mausurkotta rate was raised to Rupees 9-6-0 in 1863, and when Ichapore was opened in that year, the same rate was sanctioned there. The Nowpada rate was enhanced to the same standard in 1875, on the ground of increase of prices, difficulty of obtaining labour and the enforcement of a higher standard of salt. The enhancement was sanctioned on the distinct understanding that only salt of high quality would be accepted. At Womeravilli the rate was raised in 1866 from Rupees 7-8-0 to Rupees 9-6-0 a garce on the ground that labour at the neighbouring port of Calingapatam was better paid and that endeavours were being made to increase the outturn and improve the quality of the salt.

79. In the Vizagapatam district in 1866 the Collector reported that the ryots at all the pans were extremely dissatisfied with the rate of Rupees 7-8-0, and, considering the famine prices of food and the high wages obtained by the labouring classes, recommended that the rate should be increased to Rupees 9-0-0 per garce. The Board supported the proposal and indeed expressed an opinion that Rupees 10-0-0 a garce was the least that should be given for "salt of really good quality." Mr. Clarke two years before had, however, condemned the Vizagapatam salt. Government sanctioned the raising of the rate to Rupees 9-0-0 per garce "on the understanding that salt of good quality should be supplied." In 1866-67 it was regarded as an important object to extend the site of the Bimalipatam salt-works, where the stores had run very low. But no site was available and ground had to be taken up at some distance from the form and not of a good quality, being porous. A special kudivaram of Rupees 3-0 a garce was sanctioned on these grounds.

80. In 1866 the Collector of Godavery reported that the ryots had made a better salt than before and had taken trouble in extending their pans, in allowing the brine to stand longer before bringing the crystallising beds and in scraping only once in eight days. On these grounds and "looking to the present rates of hire and provisions" the Collector thought the kudivaram too low and advised that it should be raised to Rupees 10 per garce or 1½ annas per maund. The Board supported the proposal "on the understanding that only good salt is to be taken and all inferior produce destroyed." Government sanctioned the measure.

81. In Kistna the rate of 1862 seems to have been raised the next year to Rupees 8-2-0 the garce, and in 1866, on the ground of increase in prices of food and labour and greater particularity in acceptance of salt, the rate was further enhanced to Rupees 10-0-0. This did not include the case of Pandraka, where spontaneous or semi-spontaneous salt is collected. In 1863 the rate for such salt was raised to Rupees 3-12-0 a garce, and in 1869 was further increased to Rupees 5-0-0, on the ground of enhanced prices and the severity of the labour of collection.

82. In Nellore in 1865 the Collector represented that the existing rates were insufficient to get the required quantity of salt made and proposed that the rate should be raised to Rupees 10-0-0 per garce, including labour and material for thatching heaps. Government sanctioned this. Nellore therefore appears to be exceptional in this respect of demanding from the ryots labour and material for covering the heaps, without any extra remuneration.

83. The rate was raised at the northern divisions of Chingleput in 1870 to Rupees 12-0-0 per garce. The increase was first recommended on the ground of the increased price of labour, and afterwards on account of the increased stringency in demanding good salt and aid in guarding it at the pans. Government did not immediately accede to this.

proposal, but, after asking some information as to the saleability of pans and the prices fetched, yielded to the almost unanimous recommendation of a series of Collectors.

84. In Tanjore in 1863 the Collector represented that the stock of salt at Negapatam was being reduced to a low ebb and that the railway traffic was falling off in consequence and urged that the rate of kudivaram, which was then Rupees 10-10-0 for all Tanjore stations, should be raised to Rupees 15 at Negapatam, Rupees 13 at Kovilpat and Rupees 12 at Neidavasal. The Board at first demurred. But afterwards the rise to Rupees 15-0-0 at Negapatam, Rupees 13-2-0* at Kovilpat and Rupees 11-14-0 per garce at Neidavasal was sanctioned "in consideration of the difficulty at present of maintaining an ample supply at Negapatam and on the distinct understanding that none but salt of really good quality is to be received and that all bad salt is to be unhesitatingly destroyed." The rate of Rupees 11-14-0 was also sanctioned for Chandrapadi, a division afterwards replaced by Tranquebar, for which the same rate was approved. The rate for Negapatam was, however, in 1865 revised and, in consequence of the difficulty of turning out good salt, three graduated rates according to quality of salt, Rupees 9-0-0, Rupees 10-0-0 and Rupees 12-0-0 per garce, were sanctioned for that division. In 1866 the rate of Rupees 11-4-0 per garce was made permanent for Neidavasal and Tranquebar, (Kovilpat had meanwhile been closed), on the ground that the circumstances which justified the temporary enhancement still existed. In 1868 the kudivaram for manufactured salt at Vedaranyam was lowered† to Rupees 8 per garce. *Manufacture*, as distinct from the collection of spontaneous salt, had begun at Vedaranyam in 1863, at the rate then generally ruling in the district, viz. Rupees 10-10-0 the garce. In January 1872 the Collector urged that the Negapatam rate should be again raised to Rupees 15-0-0 the garce. Many pans were lost, waste and the endeavour to supplement the produce of Negapatam by Vedaranyam salt had not been successful. Wages had risen, the stock was short and the canal Vedaranyam was not in good order. The Board recommended the enhancement and Government sanctioned it. In 1873 the rate at Vedaranyam was raised to Rupees 10-10-0, exclusive of Rupees 7 per garce for conveyance to Negapatam, where Vedaranyam manufactured salt is stored. In 1874 the same rate was sanctioned for the then first opened station of Velangani, with an allowance of Rupees 4-6-0 for carriage to Negapatam. The carriage from Vedaranyam is, however, now arranged for by contract.

85. The sudden increase from Rupee 0-1-9 to Rupee 0-3-0 a maund in South Canara was sanctioned by Government in October 1874 in order to encourage the manufacture. The matter has been noticed in our report on the salt supply of the West Coast of Madras.

86. To sum up;—the history, (and indeed it could not be otherwise), is one of almost uninterrupted enhancement. Except in two cases in Tanjore and a doubtful case in Godavery, a rate once raised was never again lowered. The rates have been most largely increased in the northern districts. At Nowpada the increase has been over 200 per cent., but there the initial rate was abnormally low. Still, even at Ganjam and Womeravilli the increase is not far from 100 per cent. In Vizagapatam it is 50 per cent., and in Godavery, Kistna and Nellore about 30 per cent., the result being that these five northern districts now stand little below the general rate of the three southernmost districts of the east coast, (Tanjore, Madura and Tinnevely). In the north of Chingleput a special rate of Rupees 12-0-0 prevails, justifiable perhaps by the necessity for pushing on manufacture there. Then comes a belt of anomalous rates in the south of Chingleput and the northern pans of South Arcot; their history has been given at length. The rate at Gundalam is the same as in Nellore. At Negapatam special circumstances have led to a rate of 2 annas per maund. In South Canara the rates were raised by

* The slight difference was to get an exact number of pies per maund.

† This lowering as well as the subsequent re-enhancement in 1873 appear to have been carried out without even the knowledge of the Board.

a stroke of the pen from Rupee 0-1-9 to Rupee 0-3-0 a maund. The figures of salt stored at Kudivaram paid every fifth year are incomplete for the earliest year, but as far as they go they give the following average rates: 1855, Rupee 0-1-0-9; 1860, Rupee 0-1-2-7; 1865, Rupee 0-1-3-9; 1870, Rupee 0-1-5-9; 1875, Rupee 0-1-5-8. The money value to the manufacturer of the orders of Government in 1862 (see above para. 69) undertaking the construction and maintenance of main channels cannot be precisely calculated; but in the chapter on cost it will be seen that it has seriously added to the charges borne by the State.

87. The rates per *garce* have been given, (1) because in 1855 the *garce* was a measure, not a weight, (2) because in case of many of the rates it would not be worth the trouble to reduce them to maunds. But in the column for *present* rates, the reduction to rate per *maund* is made in all cases except those of the anomalous rates of Chingleput and South Arcot.

88. It is interesting to notice traces of an attempt to maintain more than one rate according to quality. We see these at Negapatam and in South Canara, and occasionally, (e.g., in Vizagapatam and Kistna), a reduction has been made from the kudivaram on the ground of the inferior quality of the salt delivered. The special rates now given for some pans at Bimlipatam and in South Canara are based on considerations of distance from the platform.

89. In the earlier years of the monopoly, salt was always sold by measure, a *garce* being 400 mercals of 828½ cubic inches. In 1828 substitution of weighment for measurement and description of weighing machines. weighment was introduced and a *garce* was declared equal to 9,256½ lbs. In 1844 Act VI of that year regulated the price of salt by reference to the *maund*, and the *garce* was therefore made equivalent to 120 × 82½ pounds or 120 Indian maunds. But the Board took the opportunity to urge a return to measurement, and in 1846 the Government of India authorised "the substitution of a measure of capacity to be used in the maritime provinces of the Madras Presidency in conducting the sales of salt, instead of the Indian maund of 3,200 tolas weight." There was some difficulty in getting a measure which should hold approximately a maund of salt, and the Board in 1848 were permitted to go back to the mercial. Then arose the question what mercial, and it was not till 1850 that Government authorised the adoption of the DeHavilland mercial of 828½ cubic inches.

90. In 1855 Government recorded a decided opinion in favour of weighment both for receipt and issue of salt, but, pending discussion of the question of an excise, contented itself with rectifying an alleged error in the standard of conversion and declaring 424 mercals to be the measure which, on an average, most fairly represented the weight of 120 maunds. But, beginning from that year, efforts were made to substitute weighment for measurement, and, as a preliminary, the Mint Master was directed to design "a balance suitable for weighing salt." As, however, a considerable time would elapse before even the design could be completed, the Board directed Collectors of salt-making districts to indent on the arsenal for ordinary scales and weights, supposing that these might be furnished with comparatively little delay. The arsenal was unable to comply with the call and the Board asked to be permitted to write to England for such machines as were required, the selection of the most suitable kind of machine being left to W. H. Bayley. Meanwhile, except in the west coast districts, the Board proposed that sales by measurement should continue. Government thought they would save time to go on with the Mint Master's design and to introduce machines on that design, when approved, gradually in one district after another. Meantime sales by measurement might continue.

91. One machine on the Mint Master's pattern seems to have been made and tried, and in 1857 the Court of Directors sent out two English weighing-machines, which were also tried. Both patterns were approved, but their lift seems to have been very small, not exceeding two maunds. However, Government asked for 110

machines on the English pattern. Before passing this indent, the Secretary of State asked whether machines of the pattern then lately sent to Bombay, costing from £1-10-0 to £2-10-0 each, would not serve as well as the machines indented for by the Madras Government, which cost £20 apiece. The Government of Bombay was consulted, but at the time the machines had not arrived. They seem to have been received early in 1861. In the meantime, however, Mr. Clarke had reported that common beam-scales would be the most convenient means of weighing. Government then recorded an order that steps should be taken to supply all districts with beam-scales and weights and to introduce the change to weighing from 1st July 1861. An estimate for the necessary number of such scales capable of weighing $\frac{1}{2}$ of a ton, (about 7 maunds), was therefore prepared. But meanwhile the Board had the opportunity of inspecting the machine referred to by the Secretary of State or a machine built on that pattern with some modification* and capable of weighing 6 maunds at a lift, and gave their vote strongly in favour of its adoption. The Government likewise agreed.

92. To supply the necessary number of machines was not, however, the work of a day, nor were there wanting some among the Collectors who resisted the change from measurement. It is not clear when the alteration of system was completed, but probably the year 1866 saw measurement everywhere abandoned.

93. The platform machine, as the new machine was generally called, was in principle simply a steelyard. A stout stand supported the fulcrum. The lever, shaped with two branching arms, had a knife-edge at the extremity of each of those arms. These were on the upper side and supported the weight of the platform, which was made of open-work iron bars. On the underside at points situated at a small distance from those supporting the platform were other two knife-edges which rested on the fulcrum. The distance to the other end of the lever being much greater, the counterbalancing weight was proportionally light as compared with that of the salt placed in baskets on the platform. The point of application of the counterpoise to the weight of the salt is now fixed, the weights being varied; but for the tare of the baskets a rider was provided which moved along the lever. The machine was gradually improved and the description above does not exactly apply to it as first introduced.

94. As early as 1862 complaints were made of these machines, the special defect being the uncertainty of weighing according to the position of the baskets. But, as the construction improved, this uncertainty diminished and some experiments conducted by Mr. Clarke in April 1865 gave 0.7 per cent. as the highest error due to different placing of baskets. These experiments, it must be remembered, were conducted in the Madras store-yards with machines fresh from repair by skilled mechanics. Government perceived the importance of this condition, and in their orders on the case directed that a trained smith should be attached to each salt-manufacturing district, and that he should first go through a course of instruction at the mint.

95. In November 1869 the Collector of South Arcot reported very strongly on the defect of uncertainty, as shewn by the platform machines at Merkanam. The Mint having been ere this closed, the Board consulted the Superintendent of Public Works Stores and Workshops. Mr. Grainger replied that the defect was originally due to imperfect construction, the knife-edges not being truly parallel nor truly edges, whence uncertainty and sluggishness, but that the mischief was aggravated by rough usage, especially by the jar caused by loading with baskets. To obviate this latter cause of error, Mr. Grainger proposed to introduce a lever which would enable the salt officials to lift the platform off the knife-edges while it was being loaded; and this the Board approved. They also asked for a strengthening of the establishment of skilled workmen at least for two districts.

* The modification appears to have been the substitution of a platform for a scuttle.

96. About a year afterwards, Mr. Grainger proposed for the Madras store-yards a machine of quite different construction. The fulcrum is firmly fixed on a strong wooden stand, the lever resting on it by a knife-edge. The shorter arm of the lever is branched, and each branch also carries a knife-edge on which, by hooks,* hangs a large iron pan with a moveable back secured by a bolt. The counterpoise is attached to the long arm of the lever, and there is another lever which, when pressed, lets the pan drop on the wooden supports and lifts the central knife-edge off the fulcrum, relieving all strain and jar during filling. When the needful amount is weighed, the bolt is slipped and the salt drops out at the back of the pan.

97. The Board and Government approved of this machine and the construction of fifty of the pattern to begin with, was ordered.

98. In May 1874 the Board called for a general report on the new weighing machine, known as "Grainger's" or the "pan-scale," and on receipt of all replies recorded the following proceedings.†

"From the replies received it appears that great diversity of opinion exists. The Collectors of Godavery, Chingleput, Tanjore, and Malabar speak in favorable terms of the new pattern, and assert that machines of that description are more accurate and handy, more easily adjusted and repaired, simpler in construction and capable of being worked more expeditiously than those of the old pattern. The Deputy Collector in charge of Salt at Ganjam approves of them, but states that they fail in one point, viz., the rapidity with which the salt can be removed after weighing, and that, if a combination of the advantages of the two patterns is not feasible, he prefers the old to the new. The Deputy Collector of Nellore expresses a personal preference for the new pattern, but states that it is not liked by the salt officials, manufacturers, traders, and coolies, its defects being the difficulty of removing the salt after weighing, and the want of one-maund weights.

"The Collectors of Vizagapatam, Kistna, South Arcot, Madras, Tinnevely, and South Canara condemn the new pattern machines altogether. They are declared to be less easy of adjustment, not so handy, being heavier, more frequently out of order, and not capable of being worked so expeditiously as those of the old pattern.

The two defects most prominently noticed are * * * * * the difficulty of removing the salt after weighing and the want of one-maund weights. A remedy for the first defect was suggested, and the Superintendent, Department of Public Works Workshops, was requested to have the requisite weights made and to supply them on indent. Nothing, however, appears to have been done.

"One or two Collectors urge the necessity of a decision as to the relative merits of the two patterns being arrived at shortly, as they require more machines, and Mr. Plunkett is of opinion that, if the preference is given to the new pattern, it must be introduced into every district simultaneously, its unpopularity being such as to drive traders from stations where it may be introduced to others where the old machine is in use.

"The Board see no necessity for insisting on uniformity, and resolve to permit Collectors to indent for machines of the pattern which they prefer. The result which Mr. Plunkett anticipates from the use of two different patterns in adjoining districts may be obviated by retaining the old pattern at those stations in the north of Nellore where the sales are likely to suffer from the proximity of the Kistna depôts. The cost of carriage will, however, prevent traders from resorting to very distant stations on this account. The Superintendent, Department of Public Works Workshops and Stores, should put in hand at once a sufficient number of both descriptions of machine to meet the wants of the different districts, and Collectors should specify in their indents the pattern required.

"It seems to the Board that the objections to the new pattern arise, not so much from any inherent defect in the plan on which the machine is constructed, as from faulty construction, difficulty in getting repairs executed, and want of practice in working them. There is a want of stability in the wooden frame-work, which is not, as a rule, sufficiently strong to stand the rough usage it meets with, consequently it soon becomes rickety and the balance is destroyed. The Board believe, however, that the new machines are more accurate than the old, and that they will eventually supersede the latter. With a view to enable Mr. Grainger to correct the defects complained of he will be furnished with a file of the letters above recorded, and he is requested to give his best consideration to the improvement of the machine. His attention is called to the suggestion of the Chingleput Deputy Collector that machines of a smaller size

was a subsequent improvement, which considerably enhanced the accuracy of the machine.

2565, dated 3rd October 1874.

should be made to weigh from one to three maunds, and a few should be put in hand for trial. The substitution of zinc for iron, as suggested by the Collector of South Canara, also appear desirable. The Collector is authorized to carry his proposal into effect.

"As regards the old pattern, every endeavour should, of course, be made to render them as accurate as possible, and to remedy any defects that are capable of being corrected."

"After supplying the four districts which have decided in favour of the new pattern with the number of machines required by them, Mr. Grainger should prepare a dozen machines of the best construction, large and small, for issue to other districts, with a view to their being given a further trial under the eye of the Deputy Collectors and their best Superintendents. The difficulties in working them complained of have been overcome in some districts, as will be seen from the correspondence recorded above; and as the new machines are, when in good order, undoubtedly more accurate than the old platform weighing-machines, the Board desire that every endeavour should be made to surmount all obstacles with a view to the ultimate universal adoption of the former."

The present state of things will be described in the following chapter. Little or no progress has been made towards the consummation wished by the Board.

99. But besides the "platform machines" and "pan-scales," there are to be found everywhere cup-scales of a simple construction for weighing one or two maunds. At the short end of the lever is a copper cup, at the long end a fixed weight. Supposing the machine exact and in order, when the cup is so far filled with salt as to bring the fixed bob to equilibrium, it contains a maund and may be tilted over and so emptied. It is not very clear to whom these scales are due. They are mentioned as early as 1862, but a great demand for them seems to have sprung up in 1869. Mr. Grainger improved their construction by making the points of attachment and bearing more definite.

100. The high ratio both of the salt-tax and of the cost of carriage to the intrinsic value of the article seems often to have suggested the question whether it might not be possible by some plan to equalise the selling price of salt throughout the Presidency. Thus, in 1830, Government proposed that a drawback, graduated so as nearly to cover the cost of carriage, should be allowed on salt carried into the interior; but the Board of Revenue doubted the expediency of the measure, and their doubts were shared by the Court of Directors. The question was again raised by Mr. Blackburne, Principal Collector of Madura in 1839, seemingly with a view to check the consumption of earth-salt; but the plan of drawbacks was ultimately disallowed in 1844 on the ground that the diminution of revenue would probably be greater than could be compensated by the increased consumption which the grant of drawback was intended to foster.

101. The scheme of interior Government depôts was also brought forward at an early date as a means of equalising the selling price of salt. But, (see Mr. W. H. Bayley's memorandum, para. 188—197 from which the above is condensed), the Board in 1854 expressed themselves strongly opposed to any such action, adopting the word of Mr. Bourdillon, when Collector of North Arcot:—"I think it may be considered certain that the actual transit and storing of the salt would cost the Government far more than they would cost individuals; the excess would be so much capital wasted, and, in addition to this, the speculations now practised at the pans would no doubt be carried on in this new and wide field, thus involving great loss to Government. In both these ways, as well as in the benefit given to the inland consumer, the productiveness of the tax would be diminished, or, in other words, the lowering of the Government price would, *pro tanto*, be rendered impossible. They took the same view in January 1855, when reporting on a suggestion for the opening of depôts put forward by the Court of Directors.

102. Yet in February 1856, *à propos* of the opening of the Madras railway, the Board strongly urged on Government the establishment of depôts along the line. Government pointed out the inconsistency of the opinions now expressed with those put forward a year before, but, in view of the uncertain future of the salt revenue and the high rates for railway carriage, did not enter on the merits of the question, merely observing that in no case would they have

sanctioned the sale of salt at the inland depôts at the monopoly price without addition of the cost of carriage. The Board, however, again urged the establishment along the railway of Government depôts at which salt should be sold at the monopoly price, expecting an enhanced revenue which would more than cover the cost of transport. But Government still adhered to its views, remarking that the very papers relied on by the Board shewed that private enterprise was quite ready to embark in the salt-carrying trade by rail. The Court of Directors seem to have been not altogether satisfied with the conclusion of Government, and the question was again referred to the Board with instructions to consult Collectors. But, the excise discussion now coming up, the matter was laid aside for a time, and when, in 1859, the answers of local officers on the line of rail were obtained, the Board admitted the justice of Government's view, the distribution of salt by rail having, in point of fact, been efficiently carried on by private trade. The question, as far as railway depôts go, may be considered settled by a ruling of the Secretary of State in 1861, to the effect that the establishment of inland depôts was only permissible when the supply was either insufficient in quantity or exorbitant in price, and then only on condition that the salt should be sold at such a price as to cover carriage and wastage, and only till private trade should be able to supply salt at a fair price. These conditions are not likely to be found along any line of railway.

103. Under certain arrangements made by the Railway Company, two or three firms engaged in the salt-carrying trade appear to get storage room for their salt free of charge at most of the larger stations of the Madras Railway and so far have an advantage in competition. But Government has nothing to do with this arrangement.

104. The general feeling has thus, it will be seen, been adverse to the establishment of inland depôts. In some cases, however, special reasons have led to a deviation from the general principle. For instance, in Malabar, as noticed by Mr. W. H. Bayley, depôts had been established along the Cochin frontier, at which salt was sold at prices lower than the usual monopoly price. The difficulty had dated from 1847, when the introduction of Cochin salt, then paying less than the tax levied in British territory, seriously diminished the Malabar local salt revenue. Three depôts were therefore opened at Utapallyam, Alatur and Palghat, where salt was to be sold without the cost of carriage being added to the monopoly price. But the Cochin Government again reduced its rates and baffled the Madras arrangements. Negotiations were then entered into and the Cochin Sirkar agreed not to reduce its rates for 4 years. This concession obtained, an attempt was made to exclude Cochin salt by putting a low price, (Rupee 0-9-2 on the coast and Rupee 0-13-9 inland), on the salt sold at our frontier depôts. This was in 1852. But after three years' experience the Collector reported that, though Cochin salt might be kept out, the salt at our other depôts had been so entirely superseded in the market both at home and in other districts by the cheaper salt sold at the frontier depôts, that the net profit to the revenue had been zero. The Board (1855) was disposed to continue the experiment, but Government would not agree to this, and the price at the depôts was raised to 1 Rupee and subsequently, (when the withdrawal of Government from the importation of salt on the west coast was contemplated), to Rupee 1-1-0 at the inland depôts. Nor were stocks at these inland depôts replenished even when the prospect of the withdrawal of Government from the trade faded away, and the last of them was apparently closed in April 1858.

105. Again, in South Canara, inland depôts were introduced so early as 1832, when a store was established at Buntwal on the north bank of the Netravatti river, 16 miles from Mangalore. In 1846 three more depôts were established, (1) at Baje on the Sivarna river in the Udipi taluk, (2) at Haladi on the southern arm of the Kundapur river, and (3) at Vandase on the northern arm of the same river. In 1852, on the recommendation of Mr. E. N. Maltby, a fifth depôt was set up at Pane Mangalore, just opposite Buntwal. The sites were chosen chiefly for the convenience of the pack-bullock traders from Mysore, to whom and to whose cattle the climate and other conditions of the im-

mediate coast were inimical. Till 1865 salt was sold at all these depôts at the same rate as prevailed for the time being at the stores on the coast. In 1864, however, Mr. Clarke recommended the abolition of depôts. The Board, who then advocated the entire abandonment of monopoly and Government import, did not specially notice the depôt question, as of course with the Government monopoly the depôts would disappear. Government, however, not going so far, dealt with the question and directed that the system should be allowed to continue for the time, but that the Buntwal store should be amalgamated with the depôt at Pane Mangalore. It was, at the same time decided that the cost of transport, wastage, &c., should be added to the monopoly selling prices of salt sold at these depôts, from 1st December 1865. The addition to the monopoly price was fixed at the following rates.

Buntwal and Pane Mangalore...	Rupee 0 1 5 per maund.
Baje	" 0 3 3 "
Haladi	" 0 8 0 "
Vandase	" 0 2 10 "

On this addition being made, the sales at the last three depôts immediately began to fall off,* and the stocks at those stores were sold off at the monopoly price without addition and the depôts closed, Baje in October 1870 and Haladi and Vandase in February 1872. Salt is still sold at the remaining inland depôt of Buntwal-cum-Pane-Mangalore at Rupee 0-1-5 above the coast monopoly price. The sales from 60,620 maunds in 1276 Fasli steadily dwindled to 13,394 maunds in 1282. Since then, however, they have slightly revived and in 1285 sales were 18,975 maunds.

106. The Madras stores must also, strictly speaking, be considered an exception to the general rule against depôts at a distance from the pans. But the difficulty of obtaining suitable storage ground elsewhere, the advantage of concentrating the salt from the various works and the facilities of transport afforded by the canal, overbore the objections.

107. The depôt at Home's Gardens near the Adyar, whither the salt of Vadaranyam, and occasionally, in case of short supply, that of Covelong, is carried, and which was opened in 1862, appears to have been justified on similar grounds.

108. As far as the salt of Vedaranyam, whether spontaneous or manufactured, is concerned, Negapatam must also be regarded as an exception to the rule against depôts. Here not only is the salt carried from Vedaranyam to the Negapatam stores, but upwards of a lakh of rupees has been spent in cutting the canal connecting the two points, and a special discount is allowed on the spontaneous salt. But these must be looked on as exceptional measures for the development of the Vedaranyam salt-field, an object which Government has had much at heart. The subject will be more fully noticed below.

109. In the years 1858—1862 some depôts were established up the Godavary apparently more with the view of fostering the river trade than anything else. Even in that light they were not successful, and, when, in 1874, the Collector proposed to repeat the experiment, Government refused their consent. In 1860 the Collector of Ganjam, (probably not to be behind the Collector of Godavary), proposed to establish a depôt inland from Calingapatam on the Vamsadhara river. A trial trip was made by the Deputy Collector, but with discouraging results, and the experiment was not repeated.

* The sales were

in Fasli 1274 (year before addition.)				in Fasli 1276 (year after addition.)	
Baje	...	...	...	Mds.	Mds.
Haladi	...	...	...	18,975	11,563
Vandase	...	...	...	33,577	8,922
	...	...	...	15,542	4,979
Total...				71,095	22,234

and in 1276 Fasli the total sales were only 6,410 maunds.

110. The policy pursued till 1854 in dealing with the spontaneous salt which often forms in low saline swamps is thus summarised by Mr. W. H. Bayley in paras. 79—85 of his memorandum:—

"In some localities, such as Vedaranyam in Tanjore, (near point Calimere), and in the neighbourhood of the town of Masulipatam, there are vast tracts of low swampy saline ground where almost any quantity of salt can be produced. This is generally known as 'spontaneous salt.' No reservoirs or pans are required; for at high tides the sea is allowed to flow over the level earth, and its return is prevented by quickly throwing up small banks; the enclosed water is then allowed to evaporate. Should the demand for salt increase, the manufacture at these places could be easily extended." At present it is more convenient for the traders to have several places of sale than to be obliged all to resort to one spot. The ground at Vedaranyam also is inconvenient of approach in the present state of inland communications, and not near any large town where traders are likely to come.

"In Ganjam, swamp salt is found in hot seasons, and has occasionally been collected and sold on account of Government, at 60 Rupees a garce.

"In Rajahmundry, it is found along the coast. It was formerly collected and sold with Government salt, but latterly it has been destroyed.

"In Nellore, swamp salt is found; when it is of a good quality, it has sometimes been collected and sold on account of Government. Cost of manufacture about 4 Rs. a garce.

"In the northern part of the Chingleput district, near Sriharikottah, swamp salt was once collected at a cost of 6 Rupees a garce, and sold, the same as sea-salt, on account of Government. It was said to have been of inferior quality, and the collection and sale were discontinued.

"In Tinnevely, swamp salt is plentiful, but it is always destroyed.

"The mode of destroying swamp salt is generally by treading it down with cattle. The facilities for smuggling seem to be the chief objection to manufacturing it."

111. In their Order, No. 1647, dated 6th July 1859, in commenting on a somewhat sweeping impressment of labour for the collection of spontaneous salt carried out by the Collector of Masulipatam, the Government of Madras observed:—"This part of the salt revenue arrangements, viz., the treatment of spontaneous salt is one calling for enquiry and reform. The Board of Revenue will be directed to collect information on the subject from all the districts in which such salt is found and then submit their views on it to Government, with definite propositions as to future proceedings." The Board accordingly addressed Collectors of maritime districts asking where spontaneous salt was found; how it was dealt with; if collected, how and at what cost collected; if destroyed, how and at what cost destroyed. Collectors were also to report how they proposed to treat the product in future, whether it had been collected or destroyed before. Replies were duly received, but the action taken upon them was not very important in the way of increasing the number of places in which spontaneous salt was utilised.

112. In Nellore, however, for a short time spontaneous salt was collected, but the Board then adopted the policy of trying to prevent its formation by an embankment across the Pulicat lake, and by watching and destroying the salt forming in the excavations made by the diggers of shells for lime. In Madura the collection of spontaneous salt has however gained some slight footing. But Vedaranyam remains the great reservoir of salt of this class, having in the 10 years ending 1874-5 yielded 732,751 maunds, while the quantity collected elsewhere has altogether in the same period only amounted to

* "At Masulipatam, the average annual quantity of salt manufactured in the 10 years ending with July 1853, is as follows:—

Manufactured salt.....	21,650 Maunds.
Spontaneous or swamp salt.....	4,299 "

"In Tanjore the Vedaranyam Cotaur, which is supplied by swamp salt, receives about 20,000 maunds."

54,933 maunds.* A good deal of money has been spent in endeavouring to foster the consumption of this Vedaranyam salt. Upwards of a lakh of rupees has been spent on a canal uniting the salt-bed with Negapatam, though this was dug as much for the development of the trade in Vedaranyam manufactured salt as for the sake of the spontaneous salt. The quantity of the former carried on the canal has been double that of the latter, which finds sale chiefly for export and for mere local consumption near Vedaranyam. From time to time special discount has been allowed on Vedaranyam spontaneous salt; in 1862-3, so much as Rupees 20 a garce, (the monopoly price being then 1-8-0), and in 1868, 5 per cent.; both in addition to the usual wholesale discount of 5 per cent. on a heap of 10 garce. At Pandraba or Bantamilli in Kistna a salt is collected which is sometimes classed as spontaneous, and at other times as manufactured. Its formation needs artificial aid; but it is not made in regular pans. It may be called semi-spontaneous and amounted in the 10 years ending 1874-5 to upwards of 12½ lakhs of maunds. It is much liked by brinjars from the interior, on account of its carrying well. It will be seen from the replies of Collectors in Appendix A that in other districts, (and indeed even in the districts where spontaneous salt is collected, in localities where the product does not form in quantities large enough to be worth collecting), the policy pursued is to watch and destroy the salt or to prevent its formation by fresh water flooding. It appears to be admitted by most Collectors of maritime districts that there is some surreptitious collection by the sea-board people, at any rate for domestic use or fish-curing purposes.

113. In April 1873 Government desired the Board to consider the question how far the existing fish supply was practically wasted by the prohibitive effect of the salt duty, much fish, (so it was alleged), being thrown away or imperfectly cured which would otherwise have provided wholesome food for the people. Dr. Day's enquiries had at the same time drawn attention to the subject, and the Board, on 14th May 1873, recorded a proceeding in which they observed that the germs of a prosperous trade in salt-fish were shewn to exist already, the average value of imports and exports of that article having been for the previous 5 years, (i. e., 1868-9 to 1872-3) as follows:—

	Foreign ports.	British Indian ports.	All ports.
	RS.	RS.	RS.
Imports from.....	47,520	15,177	62,697
Exports to	1,67,720	49,320	2,17,040

that the fishing population was estimated at nearly 400,000, of which more than half belonged to Tanjore and Madura, and that in order to develop a trade of genuine fish benefit both to the inland and the seaboard population, it was only necessary to relieve the fish-curer of the burden of the salt tax.

114. The papers were circulated to Collectors of sea-coast districts with request that they would report, (a) at what points curing establishment could be best set up, (b) the communications with salt depôts, (c) the plan which each Collector would suggest for the issue of duty-free salt, (d) the likelihood of traders opening factories and the terms they would accept. The Sanitary Commissioner was also consulted as to the effect of the existing supply of insufficiently

* Canjan	23,130
Vizagapatam	1,843
Madura	20,950
	54,933

salted fish upon the public health and the use of salt-fish as an article of diet by the people of the Presidency generally.

115. Dr. Cornish's opinion was to the effect that good salt-fish would be a useful article of diet and would enter into the dietary of a large section of the population, whereas the existing supply was insufficient and very imperfectly cured. He distinctly affirmed that the salt-fish now eaten was a frequent source of disease.

116. About the same time the Government of India forwarded to the Government of Madras a paper by Dr. Day, in which that officer dilated on the injurious effect of the salt tax upon the salt-curing trade, (which he illustrated by many examples), and asked whether the local Government desired to try the experiment of a Government salting enclosure where salt should be supplied at a price a little above cost price, and if so, where the experiment should be tried.

117. These papers were also forwarded to the Board of Revenue for consideration. The Board thus summed up their views on the point:—

"The Collectors consulted are not very sanguine of success. The difficulties pointed out by them are—

1st—the opening afforded to fraud, and the probable injury to the salt revenue;—

2nd—the improbability of inducing the fishermen, who now pay nothing for the salt-earth and salt-water with which they cure their fish, to pay even the lowest rate at which it may be possible to offer salt, subject to the restriction of curing within certain limits;—

lastly—the impossibility of starting any enterprise such as that proposed, without prohibiting the use of salt-earth for fish-curing and insisting on *all* fish-curing being conducted within the limits of the Government enclosure.

"The Board do not anticipate any great difficulty in preventing the fraudulent use for other purposes of salt issued at a reduced price for fish-curing; the process of curing must, of course, be conducted under strict supervision and within fixed limits. There is no reason why such enclosures should not be capable of being guarded quite as effectually as salt-pans, whilst salt is being made, or platforms where it is stored.

"The second objection is much more valid, and the Board doubt whether the fishermen, of their own accord, resort to Government curing-yards, at some cost and greater inconvenience, merely to be enabled to produce a better article. But they are decidedly of opinion that it would pay European firms and native capitalists to establish curing depôts, in such situations as afford facilities for exportation by sea or land.

"Doubtless all idea of a monopoly must be abandoned, the fishermen being still permitted to cure their fish in their own way, should they prefer to do so. If it can be demonstrated that the improved method holds out prospects of larger profits than the primitive mode in vogue, it may fairly be presumed that they will in time give in their adherence thereto."

118. Upon this Government directed that the experiment of supplying salt at a little over cost price for curing fish should be tried at one place in each coast district, and inexpensive enclosures and sheds erected for the purpose. The Board accordingly addressed Collectors, the enclosures were to be cheap, but sufficiently strong to keep out thieves; they were to be treated as additional platforms and similarly guarded. Fish were to be weighed both on entry and exit, and the price to be charged for salt was 6 annas a maund on the east coast, 8 annas in South Canara and 12 annas in Malabar. In December 1874 a place was chosen for the purpose of fish-curing in each district, a small sum was sanctioned for initial expenditure and for establishment and guards, and the Board were directed to report on the result of the experiment as soon after the close 1875-76 as possible.

119. In the Ganjam, Kistna, Madura and Malabar districts the experiment has been more or less successful. The following table shows the quantity of salt issued and the weight of fish cured in the enclosures in each of those districts up to 31st March 1876:—

	Salt issued, maunds.	Fish cured, maunds.
Ganjam	308	1,053
Kistna	192	987
Madura	987	2,519
Malabar	627	3,002
Total.....	2,114	7,561

In other districts the project has not attracted the fishermen. In several cases, (e.g., Chingleput and South Arcot), it is alleged that there is such a ready sale for fresh fish that there remains no surplus to be salted. In Madura, Tanjore and Tinnevely, further efforts are being made to push the scheme.

120. Mr. Plowden, (see para. 678 of his report), recommended that the attempt to control salt in transit beyond the works should be abandoned and that "whether under the present monopoly or the proposed excise system, the establishment within and immediately surrounding the works should be made strong enough to detect the first attempts at smuggling; the permit should provide for the protection only to the limits of the establishment, there it should be taken and cancelled, and beyond those limits no interference whatever should be allowed with salt in transit or in store, except in illicit salt works." Indeed the Madras Government had, apparently without seeing Mr. Plowden's report, already in June 1856, on the first opening of the railway system, suggested for the consideration of the Board whether the issue of rawanahs might not be absolutely discontinued. The Board in reply said that they did not altogether concur with the opinion of their predecessors of 1854 that the abolition of the sayer chankis had rendered any attempt to keep up the rawanah system futile, but they proposed to restrict the operation of rawanahs to a circle of 30 miles radius round each salt work. Government approved of this proposal and directed a strict enforcement of the rules within the limits thus narrowed. But difficulties arose from the occurrence of large towns within the 30 miles radius, while in other cases that limit failed to embrace tracts containing deposits of spontaneous salt. The Board therefore proposed to make the area within which protective documents should be required continuous with the maritime districts and to this Government agreed, only stipulating that where the breadth of a coast district was less than 30 miles, the latter distance should be the limit. These orders were communicated to Collectors; but it is not apparent that any special measures were taken to enforce the examination of rawanahs within the tract as then defined. Still, rawanahs continued to be issued and, as we shall see, the system was not altogether inoperative, for certain seizures of unprotected salt were made from time to time.

121. In 1863 the Government by a stroke of the pen abolished rawanahs, on the ground apparently that the efficiency of the new police system was a complete guarantee against smuggling, and the pass now issued, which is given up at the gate of the platform, was left as the only protective document. Once outside the platform, salt required no protection. Two years afterwards Government set on foot an enquiry into the effect of this measure. Collectors were divided in opinion, but the Board sided with the minority in concluding it beyond doubt that large quantities of salt which had never paid duty were being carried about the country.

Government then asked for a statement of the number of seizures of unprotected salt during the last year of the rawanah system. It appeared that there had been 185 such seizures, (of which 166 had occurred in the three northern districts), involving only 827 maunds of salt. The Inspector-General of Police was then consulted and expressed himself strongly against the re-introduction of the pass system, the Board on re-consideration, declared the revival of the system inexpedient, and (Madras) Act II., 1869, explicitly repealed Section 12 of Madras Regulation I., 1805, on which the system had been legally based.

122. In 1856 the expected opening of the railway gave occasion to the framing of a set of rules permitting wholesale traders to purchase salt on credit, provided they deposited Government paper or other security for the price. The rules were not, however, actually sanctioned till some seven years later, although in the meantime the Collector of Madras had in an informal way permitted certain firms to purchase under conditions such as were ultimately laid down with due authority. The rules allow any one desirous of purchasing salt to do so, on depositing with the Collector Government promissory notes, treasury loan acknowledgments or treasury bills, and signing an agreement binding him to submit to the rules. The Collector then credits him with such sum as, with a due allowance for depreciation of market value, the securities deposited will cover, and, up to the amount such sum would cover, he is permitted to remove salt. No account is opened for less than Rupees 5,000, nor allowed to remain open for more than 6 months. Any amount unpaid at the end of that term may be recovered, with 12 per cent. interest, by the sale of the securities.

123. Mr. Bayley, (see para. 145 of his memorandum), mentions a case of the importation of English salt in 1846. The salt was bought by Government, but did not find favour with the natives and so was taken over by the Commissariat Department. Again, early in 1870 the Northwich Salt Chamber of Commerce expressed a desire to send a trial shipment of English salt, if bonded warehouse accommodation could be provided. There was no difficulty about this and a cargo of 361 tons, (= about 10,000 maunds), was consigned to Messrs. Maxwell and Co. As a special case the consignees were allowed to pay duty quarterly, and only on the quantity passed out of bond. But this attempt to create a taste for English salt was a complete failure, as in two years only 449 maunds were sold and that almost entirely to Europeans. The amount realised did not even cover the duty and the rest of the consignment was re-shipped to Calcutta. Messrs. Maxwell and Co. estimated the cost of laying down English salt at Madras at 15 annas per maund.

124. In connexion with this experimental shipment arose the question of the rate of wastage to be allowed under Section 95, Act VI., 1863, (Consolidated Customs Act), on salt stored in private warehouses. In point of fact only two cases of such storage had occurred; but the rate adopted in Calcutta, (2½ per cent.), was followed and a notification issued accordingly. The Board is competent under Section 96, Act VI., 1863, to grant a further allowance, if necessary.

CHAPTER III.—PRESENT SYSTEM.

125. In this chapter we intend to describe in general terms the system of manufacture and sale, as it now exists, and certain incidents of the present arrangements, which, though not essential parts of the monopoly, have yet a very material effect on the net revenue raised from salt. At each stage we shall venture to notice what appear to us to be defects. Where the narrative of the previous chapter sufficiently explains the existing facts we shall refer to it, so as to avoid unnecessary repetition, and only make such comments on the facts as they may seem to us to suggest. We begin by noticing the law on which the monopoly is based.

126. A history of the legislation affecting the manufacture and sale of salt in the Madras Presidency has been given in the preceding chapter, paras. 15—28. A perusal of the various Acts there summarised cannot fail to leave the impression that the law is not in a satisfactory state, being deficient in clearness and precision on the most important points. We think we can shew that, as the law stands, it is open to doubt, or at least to argument,—(1) what acts constitute offences against the salt laws,—(2) by what courts such offences can be tried, and—(3) what punishment can be awarded.

127. Offences against the salt laws are defined by Madras Regulations I., 1805, II., 1807, and V., 1831. No subsequent law creates any offence of this special kind. The offences created by the laws named appear to be the following:—

I.—The establishment, elsewhere than in Canara and Malabar, by any proprietor of land, zemindar, mirasidar, farmer or manager of land, of any salt-pans or works of any description for the manufacture of salt, excepting on the account or with the permission of Government; or the conniving at such establishment; this offence being, by Section 8, Regulation I., 1805, declared punishable with a fine of Rupees 3,500;—

II.—In Canara and Malabar, selling, on the part of a proprietor, landholder, *farmer, renter, manager,** inhabitant or manufacturer, for the second time, salt manufactured to other than the officers of Government; this offence being declared by Section 3, Regulation II., 1807, punishable with a fine of Rupees 3,500;—

III.—Everywhere, the neglect, on the part of proprietors, farmers and renters of land, managers of estates, amins, and tahsildars, to give notice of illicit manufacture in, or importation into, their lands; punishable, under Section 13, Regulation I., 1805, with “a penalty of 25 per cent. on the value of “salt proved to have been so made or imported with their knowledge or connivance;”—

IV.—Everywhere, the “engaging in clandestine or fraudulent transactions with respect to rawanahs or passes, smuggling, or conniving at the “smuggling of salt, making, purchasing, obtaining, selling or weighing salt in “an illicit manner;” declared by Section 18, Regulation I., 1805, punishable by fine at the discretion of the Judge, and “permanent exclusion from the “service of the Company.”

V.—Besides the above distinctly penal clauses, Regulation I., 1805, contains a provision, (Section 6), which enables the Collector, (except in Canara and Malabar), to eject a mirasidar who refuses to make salt, on proof of refusal to the satisfaction of the Judge.

The above provisions constitute the substantive salt law. They seem to us somewhat loosely worded, and Section 18, Regulation I., 1805, is especially vague, as it is nowhere stated what constitutes illicit sale, purchase or weighing. Indeed it is a sufficient condemnation of the present state of the law to say that under it, the power of Government to suppress private salt manufacture in South Canara and Malabar is doubtful.† Two rulings, not practically reconcilable, have been laid down by the High Court on the subject.

128. We now pass to the procedure and consider what courts have jurisdiction. The Regulations of 1805 and 1807 expressly made the court of the Civil Judge the tribunal for the recovery of all penalties, (except of course confiscation, which was always reserved for the adjudication of the Board and which has

* The words in italics are added by Regulation V., 1831.

† See para. 43 of our Report on the West Coast salt supply.

not been noticed above), and declared those penalties recoverable as a decree of court. It was apparently the intention of Regulation V., 1831, to withdraw that jurisdiction from Civil Courts altogether, for Section 2 repeals all parts of the earlier laws, making penalties recoverable in Civil Courts, and declares every such penalty recoverable by “criminal prosecution,” i.e., a prosecution before the Criminal Judge. But the Regulation only lays down a procedure for bringing offenders to trial in the cases classed above as I., II. and III. Did jurisdiction in cases IV. and V. also pass to the criminal courts? The question may, perhaps, be indirectly answered by the first proviso of Act XVII., 1840, which was passed to obviate the necessity for committing every case to a higher tribunal and made penalties recoverable before the Magistrate, reserving to him the option of committal and restricting his summary powers to what was then the ordinary limit of Magistrates’ criminal jurisdiction. Act VII., 1852, allows heads of District Police to hear and determine cases of offences against the salt laws where the value of the salt concerned is not greater than Rupees 5 and to inflict either 10 days’ rigorous imprisonment or a fine not exceeding Rupees 3, commutable to rigorous imprisonment for a period not exceeding 10 days. Madras Act III., 1865, authorised every Magistrate to take cognizance of any offence against special or local laws committed within his jurisdiction. The Madras Repealing Act of 1869, (II., 1869) contains a proviso that it shall not affect any established jurisdiction or provide or restore any jurisdiction not existing. Hence, perhaps, though it repeals Madras Regulation V., 1831, it did not affect the jurisdiction of courts of session in salt cases duly committed to them for trial. If this be a correct exposition of the state of the law when the Criminal Procedure Code of 1872 was passed, it would follow that Section 8 of that Code now regulates the jurisdiction, as the law at the time did not contain any “distinct provision as to the Court or officer before which or “before whom” offences against the salt laws were to be tried. India Act XVI., 1874, therefore, harmlessly repealed Madras Act III., 1865, for in the former Act also appears the reservation as to existing jurisdiction.

129. The above is such an interpretation of the law in respect to jurisdiction as we have been able to arrive at. It may or may not be correct, but that is the very defect we desire to point out. On such a subject the law should be explicit and clear. That it is not so, appears from the fact that last year there was a discussion between a certain Collector and the Board of Revenue as to what authority should adjudicate in cases classed above as V., (refusal of mirasidar to make salt), and that the question was not satisfactorily settled. In the course of the discussion, too, the Collector was able to argue with some plausibility that only *Magistrates of Districts* have power to try offences against the salt laws. We believe that he was wrong on the point, but such a question should not admit of argument.

130. Finally as to the punishments which may be inflicted. Regulations I., 1805, and II., 1807, speak of fine alone. Regulation V., 1831, empowers the criminal courts to award imprisonment in default of payment of fine, but that Regulation has been repealed by Madras Act II., 1869, and it appears that a Sessions Judge must, in order to enforce such fine as he may award, fall back on the provisions of Section 307 of the Criminal Procedure Code, for the last clause of Section 309 as well as the whole section is qualified by the opening words:—“in any case punishable with imprisonment as well as fine.” As offences against the salt laws in cases committed to the higher criminal tribunals were never doubly punishable, it seems that the Court of Sessions has now no power to award imprisonment in default of payment of fine in such cases. The power may, however, be reserved by some of the provisos of the repealing Act. The point should not be left in doubt.

131. Again the introduction of the “value” of the salt as a factor in determining the amount of fine leaves open a wide door for argument, value being nowhere defined. Subordinate courts, too, unless they proceed under Act VII., 1852, must fall back on Section

Doubtful what punishment can be awarded.

Other points of doubt.

307 of the Criminal Procedure Code and recover by distress and sale such fine as they may award within their respective capacities. Act XVII., 1840, does indeed speak of imprisonment, but only in the proviso and the Madras High Court has held that, under that Act, a Magistrate has no power to award imprisonment in default of payment of a fine. Under Act VII., 1852, a power of short imprisonment is given, and if a fine be imposed and not paid it may be commuted to imprisonment. Fine and imprisonment cannot both be inflicted. Moreover, here too the element of value brings in uncertainty, for the law only applies to cases where the value of the salt concerned does not exceed Rupees 5, and it is nowhere stated how the value is to be determined.

132. There are other defects in the present law. The Madras Repealing Act of 1869 did not deal thoroughly with the subject of the salt laws. Thus Section 2, Regulation I., 1805, was repealed because there had been no General Agent for 6 years; but all other references to that officer were allowed to stand. Similarly Section 12, (relating to rawanahs), was repealed, but all other allusions to the system were left part of the law. Sections were repealed which had already been expressly repealed by Regulation V., 1831, but Section 19, which had fallen obsolete since the abandonment of the monopoly in Bengal was passed over without notice.

133. The powers of arrest given the police are also too confined, and in the case which occurred at Palur in the Ganjam district, where extensive illicit manufacture was discovered, the Collector particularly drew attention to the point. This defect among others was remedied in the consolidated salt bill which the Board in March 1871 submitted to Government. No orders have yet been passed on the proposed measure, but whether for a system of excise or monopoly, a thorough consolidation and revision of the law is, in our opinion, absolutely necessary.

134. The only express provisions of law on the subject of the relations between Government and the manufacturers appear to be those contained in Sections 4—6 of Regulation I., 1805. These have been fully set forth in part. 16 of the report. Two classes of manufacturers are there distinctly recognised, "labourers" remunerated by "hire" and "mirasidars" deriving their profit from a "share" in the salt produced.

135. One of the questions expressly circulated by Mr. Plowden in 1853 was this:—
"The manufacturers, who they generally are, their rights and privileges, and the arrangements and terms upon which they carry on the manufacture." The replies are collected in the paper given in Appendix C, No. I.

136. The account given in Mr. Bayley's memorandum, (paras. 97—100) seems, to some extent, based on the information then collected; it runs as follows:—

"The persons who manufacture the salt are socially in the same position as the ordinary village ryots, but in general they are, or ought to be, in better circumstances, inasmuch as a salt pan is more valuable property than an ordinary grain land occupancy of the same extent. These people are the descendants or heirs, (often by purchase of their rights), the manufacturers who were found so occupied when Government assumed the monopoly. Previous to the monopoly, the salt-producing grounds were farmed out or rented, like other lands, in the Northern Circars, but in the Carnatic the salt produce, or its value in money, was divided between the owner and the cultivator. On assuming the monopoly, the Government recognised in the Carnatic a limited or private property in the soil and allowed the salt ryots their share (kudivaram) at a much higher rate than they ever had before, and pledged themselves to give them some compensation, in case the pans then at work were discontinued by

order of Government, unless the propriety of closing arose from misbehaviour on the part of the mirasidars or from their not manufacturing the requisite quantity. They have, however, never been called on to manufacture as much as could be made.

"In opening new pans a written agreement is entered into with the manufacturers, by which they admit the right of Government to close the works when they please, without compensation.

"At Masulipatam coolly labourers are hired by Government; but, with this exception, the salt manufacturers are in possession of what are considered valuable rights and privileges, more so, perhaps, in the southern districts and in Canara than in the Northern Circars, as in the latter mirasi right was not acknowledged and the rate paid per gurce is not liberally fixed."

"Every proprietor of a pan is registered; and, when Government orders the manufacture at any one locality, the preference is usually given to the villagers to take up the pans; but if they cannot do so, (for some expense is required at first), Government dispose of the pans to whom they please. Persons having pans, but refusing to manufacture, or only giving in a quantity far below the proper yield, are liable to have their pans taken away. A salt pan thus becomes real property and as such is disposed of by sale or otherwise."

137. From these extracts, which, as far as we have been able to learn, on the present rights of "labourers," whole correctly describe the present state of affairs, it appears that the "labourers" of Regulation I., 1805, had by the year 1854 passed into the position of ryots having the power of selling or transferring their rights. But this right was not of precisely the same nature as that possessed by a ryot in his cultivable holding, of which he had absolute possession so long as the revenue was paid. The right was rather the privilege of making salt, to the exclusion of others, in a specific area, as long as Government should maintain the manufacture at the works in which such area was comprised. For, when works were abandoned, the land seems to have fallen back into the Government waste, not to have remained the property of any individual.

138. The special privileges of the mirasidars seem to be—(1) in some cases a more liberal rate of payment, arising out of the fact that the previous arrangements had been based on a partition of the salt crop in specific shares, and (2) a prior claim to any new pans, in case of the extension of works. A full history of the peculiar rates paid to the mirasidars of Chingleput and South Arcot has already been given in paras. 65—76 of Chapter II. Their curious diversity arises from three causes—(1) the different selling price of salt at different places in the years 1800—1805, (for the conversion of the shares into money was regulated by the local average),—(2) the different proportion of the produce constituting the mirasidar's right in different pans, (varying from 18 to 28 per cent.),—and (3) the fact that the share of salt did not in every case constitute all their remuneration, grants of land being attached to some pans as an additional source of income.

139. It must, however, be borne in mind that these rights did not accrue to the manufacturers at pans established subsequent to 1805. The distinction is clearly pointed out by Deputy Collector Muhammad Yusuf, (see para. 72, Chapter II), and, on enquiring from the Collector of South Arcot whether compensation was paid on certain pans closed in 1805, we found that no compensation had been awarded, probably, as suggested by the Collector, because they were only first constructed in 1823. In fact, in case of pans opened after 1805, the conditions were matter of pure contract between Government and the manufacturers.

140. The answer to the question whether, in case of Government closing any salt-work, the manufacturers are entitled to compensation must therefore depend on the history of the work to be closed. The points to be investigated will be—(1) were the pans at work in 1805?—(2) have they since been closed?—(3) if so, was compensation awarded?—(4) when re-opened, was it not dis-

What points should be looked for in claims for compensation for works closed.

tinely stipulated that subsequent closure would give no right to compensation? If the pans have been at work since 1805, it will be necessary to enquire whether the kudivaram constitutes the whole of the emoluments of the manufacturers, or is, (as in cases in Chingleput), supplemented by grants of land or other privileges. The amount of compensation would, we presume, depend solely on the amount of kudivaram received. It does not appear to us that, in the event of the introduction of a system of excise, the right to any compensation will accrue to manufacturers generally, who will still be at liberty to make salt and sell it to the best advantage. But claims to compensation may arise whenever Government actually forbids the manufacture of pans, hitherto in use, by virtue of the powers which it already possesses under the monopoly and which it would necessarily, at least in certain instances, retain under a system of excise.

141. Another change from the earlier state of things is also clearly observable in the papers of 1854. So much of the Regulation of 1805 as prescribed the payment of compensation in the event of the limitation of the quantity manufactured had become obsolete. Indeed works seem to have been from time to time temporarily closed without any claim to compensation being admitted or, perhaps, made. Doubtless this was due to the concentration of works on the one hand and the great increase in the total quantity manufactured on the other, so that probably nowhere did even the smallest "dittam" or quantum fixed for the year fail to exceed the "quantity usually manufactured" in 1805 and the years preceding. The "dittam" system had become thoroughly established. Under it the amount of salt to be made was year by year determined both for each work and for each set of pans contained in the work.

142. Accordingly No. 2 in the list of "forms of detailed accounts to be kept in the salt divisions and villages" is a "statement of putticut dittam," shewing the name of each maker of salt, the numbers of his fields, the rate of kudivaram and the quantity of salt he undertakes to manufacture. On the first page of this statement is enclosed a "putticut moochilka" in which the "mirasidars" and "poycarries" bind themselves to six conditions, of which the first is that they will manufacture the quantities of salt specified in the appended list, at the rates mentioned and of the same quality as "the muster salt."

The other stipulations in this document to which the manufacturers agree are the following:—

(2) to forfeit all right to payment for salt inferior in colour or granulations to the muster salt and to supply other salt in its place;—

(3) in event of "negligence or indifference to your orders proclaimed by 'beat of tomtom' to 'undergo any punishment or penalty that you might inflict';—

(4) to submit to a deduction of Rs. 5 per garce of the deficiency, should they deliver short of the "dittam," without special cause, as stress of season;—

(5) in case of fraud on the part of themselves or their servants to "undergo, in the first instance any punishment that might be awarded and to (56) the forfeiture of the pans on the repetition of the same;—

(6) to repair "irrigation and navigation channels."

Thus, while, on the one hand, the manufacturers had in some cases acquired by lapse of time more definite rights than they possessed when the monopoly was first established, on the other hand their duties also came to be more clearly formulated.

143. We have already seen, (para. 69, Chapter II.), that in 1862 the last condition specified in the muchalka or agreement was modified. The construction and repair of main channels

is now undertaken by Government. The other duties of salt ryots were at the same time specifically defined, but even to the present day the kudivaram does not cover exactly the same tasks at every salt division. With regard to quality of salt, we have also seen that, in almost every instance where the rate of kudivaram has been enhanced, a condition has been attached to the effect that only good salt should be accepted, or some like clause. Nevertheless, the old form of muchalka is still retained, nor does it appear to have ever been formally modified by the Board to suit the new state of things. There was some embarrassment when, at Nowpada, we asked to see the "muster salt." The form of agreement should be altered to suit existing circumstances.

144. In order to obtain some idea of the number of persons holding interests of the nature above described and of the extent of those interests, we issued a circular requesting Collectors to state for each salt division the number of registered holders respectively holding one set of pans, two sets of pans and so on, as also the number of sets of pans held by single holders, by two holders jointly and so on. We also asked them to state the number of labourers employed. We hoped thus to be able to shew how far, on the one hand, the sub-division of property had multiplied the number of owners having interests in individual pans and how far, on the other hand, individual manufacturers had absorbed in their own hands several groups of pans. The figures obtained, are however, open to doubt and ambiguous in their meaning in many ways. The phrase "set of pans" has been differently understood in different districts, and in the southern districts there are properly no sets of pans at all. The partnerships may be shifting and complicated; thus A may own one set of pans himself, another set in partnership with C and D, and a third in partnership with E and F. Such a state of things is difficult to express in a tabular form. Again the set of pans or alam (ullum), where it does exist, has a value varying not only from division to division, but, for the most part, at the same division. With these reservations, we give the following abstracts of the returns for what they may be worth.

How far pans have accumulated in the hands of individuals.

145. The table below shews how far pans have accumulated in the hands of individuals:—

Districts.	Number of registered holders holding less than 1 set of pans.	Number of registered holders holding 1 set of pans.	Number of registered holders holding more than 1 set, but not more than 5 sets.	Number of registered holders holding more than 5 sets, but not more than 10 sets.	Number of registered holders holding more than 10 sets.	Total number of registered holders.
Ganjam.....	134	792	5	...	...	931
Vizagapatam.....	21	105	156	20	1	303
Godavery.....	615	...	112	...	...	737
Kistna.....	354	...	191	23	13	581
Nellore.....	281	744	354	34	13	1,426
Chingleput.....	746	...	860	170	109	1,885
Tanjore (3 northern divisions).....	68	...	100	23	14	205
Madura.....	104	...	193	7	...	304

These figures indicate, perhaps, that the accumulation of several pans in the hands of an individual is a process which has advanced furthest in Chingleput and Madura and that, except in the former district, the number of holders in possession of more than five sets is very inconsiderable. The returns for South Arcot and

South Canara are not reproduced as they shew internal discrepancies, while in the southern works of Tanjore and the districts of Madura and Tinnevely there are no recognised "sets of pans." In Madura an aggregation of 36 beds, (known as "karai"), is recognised as a unit of property,* and that district has therefore been included in the table. In the southern works of Tanjore 31,864 pans are distributed among 876 registered owners giving an average of 36 pans per owner; the minimum number of pans held being 2 and the maximum 500.

Sub-division of interests in single sets of pans.

146. The following table abstracts the returns in respect to the sub-division of interests:—

Districts.	Number of sets of pans held by single registered holders.	Number held by 2 registered holders.	Number held by more than 2 but not more than 5 holders.	Number held by more than 5 but not more than 10 holders.	Number held by more than 10 holders.	Total number of set of pans.
Ganjam	800	84	...	...	...	884
Vizagapatam...	461	64	131	43	...	699
Godavery	155	78	98	39	3	373
Kistna	689	120	66	6	...	881
Nellore	1,647	230	103	2	...	2,042
South Arcot...	399	37	26	2	1	465
Tanjore (3 northern works)...	676	3	...	...	...	679
Madura	146	137	73	4	...	360

The Chingleput return on this point has been erroneously prepared, and that for South Canara is dubious. Even for those districts for which figures are given, it would be unsafe to draw any decided conclusions as to the number of shavers; the marked variations observable depend probably more on the degree of care with which the register of transfers is kept up in cases of inheritance than on any other cause. For instance, it is hardly credible that in the Ganjam division there should be exactly one owner for each set of pans, or that the same should be so nearly the case in Tanjore.

Comparison of number of registered holders at the present day with the number in 1854.

147. The number of registered holders in each district at the present day thus compares with that given in Appendix D to Mr. Plowden's report:—

Districts.	Number according to Mr. Plowden's report.	Number now returned.
Ganjam	1,415	961
Vizagapatam	307	303
Rajahmundry	1,636	1,338
Guatour	1,676	1,426
Nellore	1,616	1,885
Chingleput	443	282
Madura	600	876
South Arcot	333	301
Tinnevely	262	361
Total	8,494	7,726

* See part C of Mr. Rafter's report on the Vizagapatam division.

In Ganjam these figures point to careless registration. In Nellore the decrease may be assumed to be chiefly due to the closing of numerous stations in the interval. In Chingleput the increase was to be expected from the extension of works, and the same may probably be said of Tanjore.

148. But perhaps a more definite idea of the value of the interests we are now considering may be obtained by estimating the average out-turn of salt per head of registered holders of salt-pans. This is done for each division in the statement in Appendix C (No. 2). Some of the figures are vitiated by the fact of certain works having only been open for a part of the period on which the average out-turn has been calculated. The differences are very marked both between stations and districts. But here again it would be unsafe to infer that the registered interests represent all existing interests.

149. In Appendix D of Mr. Plowden's report, the average out-turn per owner is calculated for each district, but on the manufacture of a very exceptional year. If we take the average produce for five Fashi years ending 1262 (1852-3), as given by the Collectors in the Appendix to the said report, we shall get the following comparative table:—

Districts.	Average out-turn in maunds for 5 years ending 1852-3.	Number of owners as given in Mr. Plowden's report.	Average out-turn per owner.	Average out-turn in maunds for 10 years ending 1874-5.	Number of owners now reported.	Average out-turn per owner.
	Maunds.		Maunds.	Maunds.		Maunds.
Ganjam	364,033	1,415	257	874,305	961	909
Vizagapatam ..	162,557	307	529	206,988	303	683
Rajahmundry ..	251,197	859	292	275,644*	391	705
Guatour	456,540	777	586	317,409†	484	655
Nellore	689,600	1,676	417	668,994	1,426	469
Chingleput	284,702	785	363	351,432‡	491	716
South Arcot ..	268,680	443	606	311,028§	282	1,103
Tanjore	495,222	806	615	686,332¶	876	784
Madura	329,965	333	990	307,721	304	1,012
Tinnevely	294,412	262	1,124	521,744	361	1,445
Madras	523,502	831	630	13,11,990	1,394	941

The increase in average out-turn per registered owner is everywhere very marked, and even when all allowance is made for defective registration, (and there is no reason for supposing that registration was perfect in 1854), the figures may be taken to shew that the average interest of the manufacturer, as represented by the average annual out-turn of salt, has on the whole increased within the last twenty years. Whether the average size of the alam or set of pans has diminished is another question, which we will notice further on.

150. As to the number of labourers employed, the returns appear of such doubtful accuracy that we have not reproduced them.

151. The general map shews the several salt divisions and the average amount of salt manufactured at each. A table in Appendix C, (No. 3), gives the maximum and minimum out-turn at each division during the 10 years ending 1874-75, (1284 Fashi). In

* Pennagadam only.
† Nizampatam and Chinnu Ganjam taken together.
‡ The southern pans of the present Chingleput district.
§ Killas omitted, as no figures of number of registered holders are available.
¶ Spontaneous salt excluded.

the column for remarks are noted the years in which each work was left idle in respect of manufacture, though not definitely closed. It will be observed that in some few divisions the years of inactivity recur somewhat frequently. In Appendix B will be found a statement giving the average of transactions of all kinds at each division for ten Fasli years ending 1284, and for the first and second series of years comprised within that period.

152. The disadvantages of a number of small stations are obvious. Concentration of works leads to economy in many ways and especially in the saving of establishment and reduction of the cost of manufacture, as large quantities can be made more cheaply than small. Supervision is laxer with a number of scattered works and the opportunities for fraud are multiplied. On the other hand, the out-turn at any one place depends greatly upon the season, and it might be dangerous to reduce very greatly the number of centres of manufacture. Some attention must also be paid to considerations of local supply and the existing course of trade. Still we think that the possibility of closing some of the smaller works, and thus carrying further the measures in that direction described in Chapter II., is a subject worthy of consideration. The reduction in supply can easily be made good by extension of manufacture at the remaining works, where, if necessary, the pans could in most cases be extended.

153. Without desiring to say that all the works we are about to mention should be closed, we would call attention to the following cases as instances of *prima facie* superfluity.

In *Ganjam* :—

Ichapore : it will hardly be necessary to maintain this work, unless sale there show a tendency to revive.

Mahfubandar : as to this work, we would express a distinct opinion that it should never have been opened.

In *Vizagapatam* :—

Kuppili. The brine supply is defective and the work is small.

Bimlipatam. The soil is bad and the salt produced inferior in quality.

Karasa and Balacheruvu. It seems hardly necessary to maintain both these works. Karasa could, if necessary, be extended.

Pentacottah. This site seems very unfavourable to salt manufacture, but to abolish it without substituting some other work would leave a long stretch of coast without a work. The present arrangement, by which the Superintendent remains at Pentacottah where the manufacture is trifling, while the subordinate has charge of the more important station of Balacheruvu, is certainly objectionable.

In *Godavery* :—

Mogaltur. Unless sales revive, it would probably be wise to close this work.

In *Kistna and Nellore* :—

Chinna Ganjam and the three northern divisions of Nellore lie within miles of coast and seem to present an opportunity for concentration of works. However, the earth-salt manufacture of the Ceded Districts and Karnool being suppressed, a larger demand for salt in this quarter may be expected. *Tummalapenta, Dugarapatam and Sannapugunta* seem scarcely worth maintaining, and a station might probably take the place of *Iskapalli and Gogalapalli*, even though Cuddapah would, if earth-salt manufacture were suppressed, draw more largely on these works than at present.

In *Chingleput and South Arcot* the works are not under the circumstances over-numerous.

But there seems to be opportunity for reduction in the three southern districts. In Tanjore we would point to Tranquebar and Velangani. The foul brine supply of Negapatam suggests the advisability of concentrating manufacture as much as possible on the incomparable site of Vedaranyam. At Tuticorin it would perhaps at present be well to leave matters as they are, till the railway trade develops. Hereafter the number of divisions might be revised. In the south of Tinnevely it seems hardly necessary to keep up both the small stations of Kuttanguli and Viziapatti.*

154. The works lie at varying distances from the sea, from 200 or 300 yards to three or, in one instance, even five miles. But as they do not generally derive their supply of brine direct from the sea, though in all cases that in the ultimate source, absolute contiguity to the line of coast is not essential. Yet even from the immediate source of supply the works sometimes lie far removed, channels of a mile or more being needed to carry the salt water to the pans. Considerations of level and soil have to be looked to. In point of soil the sites are, as a rule, well selected, there being sufficient clay to make sound and impermeable pans, admitting of clean scraping. In some cases, however, as at Bimlipatam in the Vizagapatam district, at several of the Nellore works and in the south of Chingleput, the soil contains too much sand and the pans are not water-tight. At Gundalam in South Arcot some of the beds have to be made with clay brought from a distance. But in the three southern districts of the east coast, (Tanjore, Madura and Tinnevely), the soil generally is excellent. In South Canara the soil is not so good. The works differ considerably in level. In the northern districts, except where the brine is drawn from pits, they lie from two to five feet above high watermark. Further south they lie somewhat lower, and in one or two instances below the level of high tide. Hence embankments begin to appear in the southern works, a protection seldom required in the northern pans. In South Canara the works lie low.

155. The immediate sources of brine supply are (1), in a few cases, the sea itself, (2) tidal creeks or the mouths of tidal rivers, (3) true backwaters, (a term under which cases properly classed under the 2nd head are often included), or lagoons, (4) canals in connexion with tidal river-mouths or backwaters, (these may be regarded as artificial backwaters), (5) brine-pits. In the three northern districts, (Ganjam, Vizagapatam and Godavery), the supply generally falls under heads (2) and (3), and, owing to the comparatively high level of the works, is somewhat deficient, the channels often only filling at spring-tides. Brine-wells appear as a joint source of supply at Balacheruvu in the Vizagapatam district. When we pass further south, in the districts of Kistna and Nellore, they play a very important part, the large works of Manginapudi, Chinna Ganjam, and Pakala depending entirely, and those of Nizampatam and Kanuparti mainly, on this source for brine. In this region the pits vary from 3 feet at Tummalapenta to 10 feet of depth at Kanuparti. At several stations the supply is liable to become scanty as the season progresses and the brine sinks in the wells. The northern works of Chingleput are the most notable instance of the 4th form of supply. They derive their brine from the northern east coast canal, which connects with the sea both by the Cooum and by the Ar at Ennore. Except when this latter closes early, or fails to open, a contingency which has happened twice of late years, the supply at these important works is ample and is carried near to all the pans by the several ramifying channels which have been made to facilitate the access of the boats which carry the salt to be stored at Madras. The supply at the southern Chingleput works is partly derived from brine-pits, partly from the southern east coast canal. Except at Covelong, there seems to be some deficiency. Thence southwards brine-pits become very important. They are the main dependence at Negapatam and Vedaranyam, though at the former station the water of the canal which connects it with the latter is sometimes used, and at Vedaranyam the manufacturers set store by the water of the Visbakam

* Shewn under one head in the Map.

or monsoon-wave which comes up under the south-west wind. This, as it spread over the face of the swamp, is caught in a supply channel and mixed with the subsoil brine. On the whole, in this tract the supply may be considered sufficient in quantity, though complaints are sometimes heard at Neidayasal and even at Negapatam. South of Vedaranyam we come on a zone of works* drawing their supply straight from the sea, though subsoil brine is as plentiful as at stations to the north. These works are either but little above or slightly below sea-level and therefore enjoy a sufficient supply. At Vairavanadapatam wells again appear and except at Morekolam and Arasadi more or less enter into the manufacture of the remaining east coast stations. The pits appear to be deeper here, but, except at Mutirāghunadapatam, deficiency of brine is not complained of. The South Canara works obtain an ample supply from a tidal river-mouth. Dr. Ratton in his detailed reports on the several works has given a table shewing the density of the brine supply in degrees of Beaumé's hydrometer at the date of his visit to each station. Much depends on the time of the year, but the cases of supply from brine-pits can in general be easily distinguished from those where the works draw upon the sea, backwater or a tidal river. The lowest density among cases of the latter class recorded by Dr. Ratton was at Kuppili, where, the bar having silted up, the water behind it marked only 1° Beaumé. At Ganjam and Nowpada too the density was low, (2° Beaumé). On the other hand the backwater at Morekolam shewed a density of 3° Beaumé. It was perhaps impregnated with subsoil brine. But the water derived direct from the sea at Adrampatam marked 5° Beaumé by the time it reached the works. The pit brine stood at from 5°, (e.g., at Tummalapenta), to 18° (at Vedaranyam). But in this kind of brine the date of test is everything. On the whole the supply may be pronounced good in respect of strength.

156. As to purity, the only distinct cases of contamination by sewage which have come to our notice are those of Woznerovilli and Gundalam. At the former place we ourselves saw the supply channel, which passes through the town of Calingapatam, and the opaque green fluid it contained seemed far from pure and from the nature of things could not be so, as it received part of the drainage of the town. Dr. Ratton at pages 4 and 5 of his report on the manufacture of salt in South Arcot and other districts (1873) points out a still clearer case at Gundalam. We have, however, visited the latter works, and it is possible that the source of impurity may have been removed. At some other places the supply looks foul and turbid; the pit brine especially often very dirty. Dr. Ratton thus describes that of Negapatam:—"The pit brine is almost everywhere scanty," (this was in March), "and very dirty, sometimes of a pea-soup colour or red from the presence of innumerable monads, often green and opaque, filled with zoospores and sometimes exuding an offensive odour, the result of their decomposition." Our own observation in April confirms the opinion as to the impurity of the brine. In backwaters, whose communication with the sea is intermittent or feeble, there must be some vegetable impurities, and so far as they receive the surface drainage of a tract of country there is the risk of animal excreta finding their way thither. But at the seasons when the bars are liable to closure the surface drainage cannot be of much importance. In speaking of the quality of Madras salts we shall have occasion to notice the amount of organic matter they contain and further to speak of the general character of the brine supply in respect of purity.

157. In most cases the brine has to be raised some height into the works. The height seldom, in case of lift from sea-water channel exceeds five feet. The depth of the brine-wells has been briefly noticed already. In Ganjam and Vizagapatam sling-baskets are generally used. Further south the picottah is used both for water from creeks and for pit brine but in the two southern districts of the east coast sling-baskets again re-appear, two or three places in Tanjore where the lift is small, and at Pernaguduru in God

* Tambakkottai, Adrampatam, Kuttuvayal, Arasadi, Vattanam.

ery the hollow palmyra scoop is used, and where the works lie below high tide level, notably in South Canara, the water passes into them by the force of gravity. The sling-basket is probably a wasteful machine, as a portion of the water falls back after being raised a certain height.

158. Dr. Ratton has given in his reports submitted to the Board of Revenue, Madras, a minute account of the form and construction of the various works in the Presidency and for details we would refer to those reports. The Statement No. 2 in Appendix C shews the estimated area of the several works. The areas there shown can, however, only be taken as approximate and though we endeavoured to explain what should be included and what excluded, we fear that all the returns have not been prepared upon the same principle. As a general rule, the works are divided into sets of pans with a certain preparatory evaporating or condensing surface attached, and each such set is known as an alam (or allum), a word the use of which may, perhaps, for brevity's sake, be excused. At one time an alam appears to have had a definite area at each work. At page 26 of the "Manual of instructions for preparing the salt accounts," we find it observed that "in general, it is believed, there is a standard extent fixed for a pan in each salt division or in each district," the word pan here evidently meaning an alam or set of pans; (see the illustrative entry in Statement No. 3; 'Note. A pan in this district consists of half a cawney'; a single salt-bed could never cover this extent of ground). So Mr. Bayley in his memorandum gives a standard area for the Attipat alam, and in the return from Nellore shewing the number of sets of pans and registered owners a local unit of area called a vamu, equivalent to half an acre, appears to have been used. The fractional alams returned from some districts point in the same direction. But, at the present day, for the most part the area of an alam is no longer a constant quantity throughout each district or division. We therefore asked for information as to the maximum, minimum and average area of a set of pans at each division and the results are set forth in the Statement No. 4 in Appendix C. Dr. Ratton also in the Appendices to his reports gives figures apparently intended to represent the area of an average alam; we have for the sake of comparison added a column to our statement in which are entered his figures reduced to acres. The Collector of Chingleput sent in a statement blank except as to Cheyur, and for that division obviously wrong, and the Collector of South Arcot has not replied on the point. The returns for the southern pans of Tanjore and for Madura and Tinnevely have been omitted, as from Dr. Ratton's reports and indeed from the Collector's replies to our other circular, it was clear that no such thing as a 'set of pans' in the sense we here intended was to be found at the southern works.

159. The statement shews enormous diversity in the size of an alam, a diversity in some cases hardly credible. For instance Dr. Ratton thus describes an alam at Pakala:—"it consists of one or more reservoirs and 34 salt beds * * * the bed area is to the reservoir area very nearly as two to three." Yet the district return shews an alam of an area so small as '02 of an acre or less than 10 yards square,* which would leave less than 2 square yards to each bed. In some cases, probably, the theoretical area of the individual's *holding* has been arrived at by dividing the area of the alam by the number of holders. It is to be remembered, too, that the pans have not been surveyed in all districts, so that the returns must be more or less inaccurate on that account. This much may perhaps be said, that the alams in the three northern districts are generally larger than in Kistna, Nellore and the northern works of Tanjore. The use of subsoil brine, tending to a reduction in the size of reservoirs, may have something to say to this. It would be interesting to enquire whether the size of the alam has much varied within the last 20 years, but the data at either end of the period are insufficient to support any decided general conclusion. In the particular case of Attipat there are the means of making a comparison. The unit-alam in that division is put by Mr. Bayley, (para. 63 of his memorandum), at 28,800 square feet or "half a cawney." Dr. Ratton gives 44,000 odd square feet; but the Salt Deputy Collector says that the standard alam in all

* 96·8 square yards.

the northern works of Chingleput is still "half a cawney." We may conclude that in the Attipat division the average area of a set of pans has at least not diminished.

160. The forms of alam are very various, as will be seen from the diagram. Proportion of area devoted to concentration. We need not dwell upon this matter. But an essential element in good manufacture being the density of the brine when admitted to the crystallising beds, and depending on the relative area allowed for concentration, we will briefly notice the latter point. Dr. Ratton gives figures shewing the area out of the average or standard alam allotted respectively to preparatory evaporation and to the final evaporation in the crystallising beds. But these figures which, he informs us, he obtained from the local Deputy Collectors, seem open to doubt and in some cases do not agree with the result of Dr. Ratton's own observations as recorded in the body of the report. For instance the figures in the table for Covelong show 41.9 per cent. of the whole area as preparatory evaporating surface while the statement in the text is to the effect that "the ullums" * "consist almost entirely of salt-beds there is a "small reservoir attached to each" * "but it is very seldom used." The figures moreover are not compiled on a uniform system; e.g., while at Attipat, (see page 109 of the report), "condensing beds" are excluded from the evaporating area, they are included at Pulidivik, (see page 112). We make these remarks merely to explain why we do not build more definite conclusions on Dr. Ratton's tables, and in any way wishing to depreciate the value of his investigations, from the record which we have borrowed and shall borrow largely in the present chapter. We know from experience the difficulty of obtaining exact information on such matters. In general terms it may be said that in the three northern districts from one-third to one-half the area is allotted to reservoirs; in the north of Chingleput one-half is allotted to reservoirs, but condensers occupy half the remainder; in Kistna and Nellore, where pit brine is much used, reservoirs and condensers get smaller. They are nearly wanting in the south of Chingleput, but re-appear in South Arcot. In Neidavasal we find the male bed with its pair of female beds described by Mr. Bayley, (para. 68 of his memorandum), and this arrangement recurs in the two most southern divisions of Tanjore, though the male beds are in less proportion. From Negapatam southwards, at stations using pit brine there are no condensers; where recourse is had to the sea or a backwater, part of the area is assigned to preparatory condensation of brine. In South Canara, besides an outer reservoir, there is an inner condensing area of about one-fourth the area of the beds.

161. Here too it would be useful to know whether the relative area allotted to the final process of crystallisation had increased or diminished. But again facts are wanting, except in the particular division of Attipat, where we can compare Mr. Bayley's description in 1854 with the present state of things. The agreement is exact, half the whole alam being allotted to reservoirs and the other half equally divided between "salt-beds" and "side-beds," (or condensers). At Kanada, however, we ourselves witnessed an encroachment being made on the reservoirs in favour of the extension of salt beds. That work had been laid out by the Deputy Collector on the principle of allowing two-thirds of the total area to reservoirs.

162. The preparation of the pans is a work of annual recurrence and occupies a considerable time. At pp. 18-19 of Mr. Bayley's memorandum will be found an estimate of the time occupied by the various processes, extending in all to 51 days. This applies to the North Chingleput works. The account given by Dr. Ratton allots from 5 to 6 weeks to the labour. The channels have to be cleared, the reservoirs and condensers levelled and filled, the ridges and banks repaired, and above all the salt-beds puddled, stamped, sprinkled with sand and levelled. Where pans lie above the reach of the monsoon floods, the time for preparation is shorter. It was one of Major deHavilland's instructions that the reservoirs should be allowed to stand untouched while the beds were being prepared. But the injunction is not, an

* The last 7 out of Mr. Bayley's 48 pans are not devoted to preparatory evaporation, but to actual formation of salt.

decid cannot, be obeyed, as the reservoirs are the only source from which water can be admitted to the other parts of the work. The chief pains are bestowed on the crystallising beds which are generally water-tight and tolerably level and hard; the reservoirs are however often neglected in point of level, and the condensers or side-beds do not appear ever to be puddled or rammed, the consequence being that they contain some six inches of liquid mud, particles of which pass into the salt-beds, the fine not being allowed to settle in the condensers.

163. For the details of manufacture at each station we must again refer to Dr. Ratton's full reports. Those details vary from one division to another, but a few general types may be traced under one or other of which all the methods fall. The arrangement of the alam of course conforms more or less to the method of manufacture.

164. The Ganjam mode of manufacture may be taken as the first type. In Ganjam, Vizagapatam and Gollaverry; Here there is a succession of reservoirs, generally four, diminishing in depth from 18 inches to 6 inches, in which the brine is gradually condensed till it stands at about 10° Beaumé. At this density it is admitted to the crystallising beds to a depth of about 1 inch, and the salt allowed to crystallise out. It is scraped with a sort of wooden hoe,—a board set transversely at the end of a bamboo,—and before it has evaporated to dryness. The mother liquor, (or biterms), is not removed each time but a fresh supply of brine admitted from the reservoir to mix with what remains. Thus an impure solution is obtained and the precipitation of chloride of sodium unduly accelerated, not to mention the increased risk of the deposit of other salts. But after every fourth scraping the biterms are either dashed back into the reservoir or allowed to evaporate to dryness and stamped into the floor of the bed. This, with variations in the depth of the reservoirs, in the depth of the irrigations admitted to the beds, (which according to Dr. Ratton were generally about two inches, or deeper than at Ganjam), and in the density of the brine in the last reservoir, (which Dr. Ratton found as high as 12° Beaumé at Karasa), is in general terms a description of the method pursued in the three northern districts. According to our own observations, however, the irrigations nowhere exceeded 1½ inches in depth and rarely exceeded 1 inch. At Binnipatam and some other works in the Vizagapatam district the preparatory area is divided into reservoirs and "channels." These latter are actually final reservoirs, but being banked off into small areas they concentrate the impurities of the mother liquor, which is thrown back into them, more than would be the case in a larger reservoir. These channels appear as 'condensers' or 'side-beds' in other works.

165. At Manginapudi, where the brine-wells come into play, a different process is followed, which is thus described by Dr. Ratton, (para. 17 of his account of Manginapudi, page 85 of his first report):—"Two or three inches of brine at about 14° Beaumé are let into the salt-beds and evaporated until salt forms; then, at the time they would scrape salt in Ganjam, two additional inches of brine are let in, also at 14° Beaumé; this dissolves the greater part of the salt already formed and is soon raised to 25° Beaumé; salt is again deposited and for the third time the bed is similarly irrigated; thus twice partially dissolving instead of scraping the formed salt. Now the bed is let alone and salt crystals begin to form and are deposited from an inch to an inch and a half of saturated brine. The whole operation takes about 8 weeks." As the second and third irrigations do not dissolve all the salt previously deposited, it is manifest that the final solution must contain an undue proportion of salts other than chloride of sodium. Yet the biterms are here, and, according to Dr. Ratton, throughout the Kistna district, "left in to assist in the production of future crops." The system at Nizampatnam and Chinnu Ganjam is much the same, the initial density of the brine as admitted to the crystallising beds varying according to the density of the original source and the extent of preparatory area. Thus, at the time of Dr. Ratton's visits, the brine as admitted

marked 14°—15° B. at Chinna Ganjam but only 10°—11° B. at Nizampatam. Nellore the method of manufacture varies according as the supply is derived altogether or mainly from wells, or from weaker sources. In the former case resembles the Manginapudi practice above described, (though the number of irrigations is sometimes only two or even one), in the latter the Bimalpatam type, with the condensers more distinctly prominent. In Kistna and Nellore, according to Dr. Rutton's observations, the depth of irrigation varied from 1½ to 3 inches.

166. In the northern works of Chingleput the prevailing construction has been already described. The density of the brine in the condensers as recorded by Dr. Rutton, varied from 9° to 14° Beaumé. In several of these works the double irrigation seems to be practised. The bitterns appear to be rejected into the condensers. At Cheyur in the south of Chingleput another method is followed. It is described by Dr. Rutton at page 17 of his first report: "After being highly condensed in successive reservoirs the brine is run into the salt beds and evaporated in shallow strata, and this is repeated every four or five days throughout the season, one layer of salt forming on the top of another until the dittam is accomplished, generally about June. The salt, which now forms a cake three inches thick in the beds, is broken up under about one-eighth of an inch of mother liquor." The irrigations in the Chingleput district are shallow, from 1 inch to 2 inches according to Dr. Rutton, but, when we visited the works in April, they nowhere exceeded 1 inch in depth.

167. In South Arcot multiple irrigations appear to be the rule. As we went further south, the condensers are generally quite rudimentary or are entirely absent. Where they do exist, the bitterns appear to be thrown into them after a few scrapings; where they are not found, no attempt is made to eliminate the extraneous salts till they actually begin to fall down, when the working is stopped for a few days and the beds flushed with the weakest brine procurable. In these southern works the irrigations are said by Dr. Rutton to be somewhat deeper than in the north. In one place Dr. Rutton notes an irrigation as deep as 4½ inches. The brine also is retained till it shows a very high density, in some cases so high as 37° Beaumé. In Tinnevely, however, the irrigations we saw were barely an inch in depth. In South Canara the system is one of shallow irrigations and the salt is scraped every day.

168. Throughout these various methods there run three radical errors, though they may severally prevail more under one system than another:—(1) the brine is admitted to the crystallizing beds at too low a density;—(2) the irrigations are too shallow;—and (3) there is no arrangement for the thorough elimination of the bitterns or fluid left after the first precipitation of sodium chloride. The first defect is more marked in works drawing their supply from the sea or backwaters than in those which employ wells; the second is more marked in the northern pans; while the third is strikingly developed in the works of the two southern districts.

169. There is, perhaps, some reason to believe that in the matter of shallow irrigations the evil has increased within the last few years. The following statements are gleaned from Flouiden's report. The Collector of Ganjam says the pans were filled "about 4 inches deep"; the Principal Assistant Collector Chicacole speaks of "2 to 5 inches"; the Rajamundry Collector, of "4 to 6 inches"; the Masulipatam Collector says "about 2 inches"; the Guntur Collector "from 2 to 6 inches." The other officers do not notice the point. Mr. Bayley, (para. 69, memorandum), in describing the Atrapat system, says that "three or four inches of brine is admitted into the salt beds" and allows six days for the precipitation of salt. Though these records are probably not based on scientifically accurate observations, they indicate on the whole deeper irrigations than those now prevalent in the works.

* Appendix C of the Madras portion of that report: replies of Collectors to Board's Orders.

Chingleput and thence northward. At the pans we visited we found, speaking generally, that salt was scraped every second or third day, at one place only every fifth day. The brine in the pans was in some cases allowed to evaporate to dryness.

170. The season of manufacture varies much in the different districts, according as they are subject to the south-west or north-east monsoons or rather as the heaviest rains come under one or the other. A statement showing the rainfall at stations on the coast in each month for the last five years will be found in the Appendix.* In the four northern districts, the south-west monsoon is the heaviest, and the rains commence in June and continue more or less till October, so that manufacture never takes place after July, and rarely in that month. In Nellore the June and July rains are comparatively light and the manufacture usually continues till August and sometimes till September. In Chingleput, South Arcot, and Tanjore it usually closes in September; in Madura in October, and in Tinnevely not till November. The period of the year over which the heavy rains are spread, as well as the quantity, determines also the date at which commencement of work is possible; for some time must elapse before the pans are dry enough for salt-making. In the northern districts, where the rains are light in the latter months of the year, the working season begins very early, and salt is sometimes gathered in the month of November. As we come southwards down the coast, the opening of the season becomes gradually later, and in South Arcot manufacture begins late in March. In Tanjore salt is scraped in February; but in Madura the first scraping takes place on the average in March, though there seems nothing to prevent an earlier beginning. In Tinnevely both monsoons are light, and salt is obtained in January.

171. A statement in the Appendix† contains the dates of first scraping of salt and of cessation of manufacture at each division during the last five years, and the following table shows the incidence of the rainfall and the average beginning, end, and duration of the season, in each district on the East Coast:—

Districts.	Average annual rainfall.	Months constituting the rainy season.	Rainfall thereon.	Average date of first scraping of salt.	Average date of cessation of manufacture.	Average duration of the manufacturing season.
	Inches.		Inches.			
Ganjam	41.57	June to Oct.	35.66	10 January	29 June	5 m. 10 d.
Vizagapatam	36.52	Do.	29.43	12 do.	5 July	5 m. 24 d.
Godavery	41.64	Do.	35.56	14 March	26 June	3 m. 12 d.
Kistna	37.41	Do.	31.42	28 February	2 July	4 m. 2 d.
Nellore	38.97	July to Nov.	31.82	30 January	15 August	6 m. 16 d.
Chingleput	53.71	Aug. to Dec.	41.13	9 March	14 September	6 m. 5 d.
South Arcot	48.79	Do.	35.63	23 do.	19 do.	5 m. 27 d.
Tanjore	45.39	Do.	33.09	6 February	5 October	7 m. 29 d.
Madura	19.60	Oct. to Dec.	10.98	19 March	17 do.	6 m. 28 d.
Tinnevely	26.79	Oct. & Nov.	10.91	26 January	5 November	9 m. 10 d.

172. The date of commencement of manufacture, however, does not depend exclusively upon the season or the possibility of making salt, but is to some extent determined by agricultural exigencies, and by the period at which the labour of the salt ryots, who also for the most part cultivate land, is set free. Another cause of variation in the dates, both of commencement and cessation of manufacture, is the

* Appendix C, No. 5.

† Appendix C, No. 6.

'dittam' system already adverted to, under which the quantum of salt to be made at each division in each season is fixed by the Collector before manufacture commences.

This system is a characteristic, and we might almost say a necessary, feature of the monopoly, and obviously give room for the existence of evils of great magnitude. The amount to be made is fixed with reference to the state of the stocks in hand and the probable demand both at the station immediately concerned and at neighbouring stations, and with reference to the rule (Board's Standing Order, No. 216) that stock for two years' ordinary consumption is to be kept at major, and for eighteen months, at minor depôts. The quantum so fixed for the station is distributed amongst the ryots with reference to the extent and number of their pans, and the details are entered in the "pattikat muchalka" which is signed by each ryot. When the dittam is restricted, it is in some places the rule to delay the commencement of the manufacture, so that the dittam may be completed simultaneously with the arrival of the close of the season. But on inspection of the statement in the Appendix it will be seen that this rule is not strictly followed even where, as in Ganjam, it is distinctly affirmed to exist. From this cause, as well as from unusually favourable conditions for manufacture, the manufacture is stopped sometimes before the conclusion of the season; but, as will presently be seen, this practice is rare, and salt is oftener accepted in excess of the dittam. It appears that in some divisions, *e. g.*, Cheyur, salt so received is paid for at reduced rates.

173. It is urged against the dittam system that, when the quantity is restricted, the system tends to the production of immature and bad salt; each manufacturer being anxious to secure as large a share of it as possible, and to make as much salt, and as quickly, as he can. This tendency ought to be counteracted by the individual dittam, or rateable share of the total, which is fixed for each manufacturer; but this part of the system is not

	Five years ending 1875.	
	Average dittam.	Average out-turn.
	I. Maunds.	I. Maunds.
Ganjam	9,10,000	7,89,717
Vizagapatam	2,88,000	2,15,700
Godavery	3,62,000	3,34,535
Kistna	9,10,000	6,37,970
Nellore	8,13,360	7,42,653
Chingleput	29,68,233	17,36,773
South Arcot	5,40,240	2,95,755
Tanjore	12,30,000	7,49,883
Madura	3,97,060	3,66,932
Tinnevely	7,91,873	7,58,634
	92,10,356	67,13,071

strictly worked, and in some cases is not enforced at all. It is, however, obvious that in the assignment of the individual dittams, which is practically in the hands of the salt superintendents and their subordinates, there is considerable scope for undue favouritism and corruption. But the evil tendencies of the dittam system are much mitigated in practice as well by the laxity with which it is in many cases worked, as by the fact that in the endeavour to comply with the rule as to the maintenance of stocks, the dittams are so high as to be rarely made up. During the ten years for which statistics are given in Appendix B, the stocks on the 1st April, which is about the period when they are lowest, have rarely been in excess of a year's demand. The average closing balance on the East Coast on the 1st April has been 60,01,652 Indian maunds, while the average annual expenditure of salt has been 64,86,892 Indian maunds. It is, however, a fact that the existence of too numerous works to which we have already called attention leads to the fixing of dittams in some cases below the normal capacity of the works; and thus the special effects of the dittam system are sometimes produced.

174. The following abstract of Statement 6, Appendix C, shows the working of the dittam system in the five years ending 1875. The out-turn given in that statement is that for the calendar year, which compares more accurately with the dittam than the out-turn for the Fashi year.

Districts.	Number of dittams fixed.	Cases in which dittam was exceeded.	Cases in which the excess was less than ten per cent.	Cases in which the excess was more than ten per cent.	Cases in which the dittam was not made up.	Cases in which the deficiency was less than 10 per cent.	REMARKS.
Ganjam	20	5	3	2	14	4	* Ichapur 1872, 1874, Nowpada 1872.
Vizagapatam	24	4	1	3	20	2	* Karasa 1874.
Godavery	8	4	2	2	4	2	* Pennugaduru 1873.
Kistna	18	3	1	2	15	2	* Mangalapudi 1871-72.
Nellore	43	19	15	4	24	3	* Polarti 1871, Pakala 1873-74-75.
Chingleput	13	3	2	1	10	1	* Kristanavaram 1872, Tannamalipenta 1873.
South Arcot	15	3	2	1	12	1	* Cheyur 1873, Vedasammanjeri 1871, 1874.
Tanjore	35	8	1	7	27	3	** Kilalai 1873.
Madura	25	9	3	6	16	4	* Neidavassal 1875 (25-9), Tranquebar 1875, Kattamavadi 1875 (14-9), Arasangiri 1872.
Tinnevely	35	20	9	11	15	4	* Muturaglamadapatam 1875.
	241	84	39	34	157	24	Moreholam 1874, Atlankarai 1875.
							* Vaipar 1872, Arasadi 1872-74-75, Taticoria 1872, Colpatam 1875, Kuttangudi 1874-75, Vizipatti 1874-75.

175. This table shows that the dittam was exceeded in 84 cases or 35 per cent. and not made up in 157 cases or 65 per cent. Of the cases of excess 54 per cent. were more than 10 per cent. above the dittam; and of those of deficiency, only 15 per cent. of the cases came within 10 per cent. of it. The manufacture ceased before the average date in 34 out of the 84 cases of excess manufacture, but in the majority of these cases, the cessation was only a few days before the average date for the division. The only cases in which manufacture seems to have been stopped at an early period of the season are those noted in the margin. These figures do not tend to the conclusion that the dittam system is strictly worked, and the out-turn seems to be to a very great extent regulated by the season alone.

176. The following statement shows how far the rule, or practice, of beginning late when the dittam is low, and *vice versa*, has been worked:—

Districts.	Total cases.	RULE OBSERVED.				RULE TRANSGRESSED.			
		Earliest date coinciding with maximum dittam.	Earliest date coinciding with a dittam above the average.	Latest date coinciding with maximum dittam.	Latest date coinciding with a dittam less than the average.	Earliest date coinciding with minimum dittam.	Earliest date coinciding with a dittam less than the average.	Latest date coinciding with maximum dittam.	Latest date coinciding with a dittam above the average.
Ganjam	20	2	1	4	...	...	1	12	1
Vizagapatam	24	4	1	3	...	1	12	12	1
Godavery	8	...	...	2	...	...	1	1	1
Kistna	18	3	...	2	...	1	2	12	...
Nellore	43	3	3	2	3	1	2	12	...
Chingleput	13	2	...	2	...	1	1	1	...
South Arcot	15	...	1	1	1	1	1	2	...
Tanjore	35	1	1	4	1	1	1	...	1
Madura	25	2	1	3	1	1	1	3	...
Tinnevely	35	1	1	1	2	1	3	3	...
Total	296	23	9	24	11	7	11	12	3
		57				43			

The figures show that the rule is observed to a considerable extent.

* In one case, the out-turn, viz., 19,911 maunds, has apparently been entered by mistake in the Collector's dittam return. It is omitted in the above statement.

* Pandraka omitted. The commencement and ending there depend entirely upon season.

177. When the salt is ready, it is first scraped on to the ridges which divide the pans. At some stations it is left there to dry for several days; at others it is removed to the individual ryot's heap, (on the drying-ground if there be one), the evening of the day on which it is scraped. On the former practice, as observed by him at Manginapudi, Dr. Ratton remarks:—"This is as it should be, and calls for but one remark; at the time of my visit, and indeed during the whole of April, the dews at night were very heavy, the heaps were uncovered, and I fear that the drying process must have lost in the night as much as it gained by day; on the other hand one cannot imagine a better arrangement for getting rid of *Mg Cl*." But wherever deposited for the moment the estimated quantity of salt scraped by each manufacturer should be daily entered in the Register No. 5, and an abstract of the estimate should be sent weekly to the Collector. These orders are, however, but imperfectly carried out. At some stations the Superintendent or Assistant Superintendent does make a daily round of the pans and estimate the output, but at most of the works we visited we found the estimate irregularly kept, and the entries generally based not on any inspection by the officials but on the ryot's own statement of the number of basketsful added to his heap. At most works similar entries are made on a slip of palmyra leaf which is stuck into each ryot's heap, but at some places, e.g., Madras and Vedaranyam, even this record is not kept. The practice of forwarding the weekly abstract appears to have become obsolete, the Deputy Collector instead calling for returns as he thinks proper.

178. The law contains no express provision enabling the salt officials to decide the standard of quality which salt must attain. But the existence of some such right appears never to have been questioned and indeed manufacture could not have gone on if Government had been bound to accept whatever the manufacturer chose to call salt, and we apprehend that, the right having been exercised throughout so long a period, it would be held that it is now not open to the manufacturers to question it. We have moreover seen, (para. 142), that the "pattikat muchalika" or annual agreement with individuals contains a special reference to quality, the manufacturer in one clause waiving all claim to payment for salt "differing from the muster (standard) either in colour or granulations." Furthermore it has already been pointed out that in most cases where, since 1862, the rate of kudivaram has been raised, it has been on the distinct understanding that only good salt should be accepted.

179. But the standard of "good salt" has never been accurately defined and the maintenance of "musters" or standard samples seems to have fallen into disuse, so that practically Superintendents of salt-works, under the general control of the Deputy Collector, are the arbiters of quality. Where the Superintendent or Assistant Superintendent makes a daily round of inspection, salt is examined while on the ridges, and if condemned is then and there thrown back into the pans or reservoirs. But where the salt is carried straight to the drying-ground, the inspection as to quality is generally made on the way. The following description cited from page 67 of Dr. Ratton's first report, quite coincides with our own observations as to the method in which the check is in such cases applied:—"About sundown a variable number of coolies, from 20 to 100 or more, come tripping to the platforms, sometimes one platform, sometimes at large stations half a dozen, laden with fresh scraped salt which they are about to add to their heaps. Now, as the Superintendent can only be in one place at a time, at large stations he is obliged to appoint assistants or peons, more often the latter, to examine the salt; but even at small stations, such as Bimlipatnam, his other duties, involving money transactions, often require his presence elsewhere than at the platform gate, and peons supply his place. These men may be honest and of the best intentions, but they have the power, for the time being, of rejecting or passing each basket of salt that is brought to the gate, and thus, further, according to their own unaided appreciation of it, for, unlike most contracts, that for salt is regulated by no standard either of size, colour or purity." But the salt is not finally

accepted when admitted on the drying-ground or platform. It passes before the Superintendent or Assistant at the time of storage, and can then be rejected. Colour and freedom from obvious impurities such as mud or sand seem to be the points chiefly asked to, but probably the Superintendents themselves could not very clearly define a standard of minimum excellence. In the event of salt being rejected by the Superintendent, an appeal is in some districts recognised to the Deputy Collector and order of the Board, of January 1874, appears to contemplate the issue of instructions by the Deputy Collector in all cases of rejection. But this order is not observed. The system certainly tends to vest subordinate officers with dangerous powers and affords opportunities for favouritism and bribery, but it is difficult to suggest a complete remedy, though a better paid and more numerous staff may mitigate the abuses which probably exist. Yet, as long as it is the manufacturer's object to make salt which will barely pass muster, and all motive to improve quality is absent, the difficulty will always present itself in one shape or another.

180. Under recent orders of the Board of Revenue, and especially since Dr. Ratton's employment on special duty in the Salt Department, much attention has been paid to the quality of salt taken into store as regards colour and freedom from dirt, and there is a general concurrence of opinion that in these respects a decided improvement is observable. This result has been obtained by the vigour with which Superintendents have excluded all dirty salt. We have endeavoured to obtain returns of the quantities of salt thus rejected, but it appears that no record has been kept at the time of rejection and the estimates are admittedly untrustworthy. We do not therefore reproduce them. The quantity rejected, especially in some districts, has, however, been considerable. Thus, at Nowpada in one year 2 lakhs out of 7½ lakhs of maunds were rejected and destroyed, while at Ganjam in the same district 20,000 maunds were destroyed out of a production of 90,000 maunds. The measure is not shown to have improved the salt in regard to chemical purity or carrying qualities. Indeed Dr. Ratton (see 22 of Appendix E.) writes that after inspection of the platform specimens collected by us for analysis he thinks "that so far as the form, size and solidity of the crystals is concerned, the salt is inferior to what" he "found at the salt works when" he "visited them three or four years ago."

181. The existence of separate drying-grounds fenced and guarded is exceptional. They are to be found in Ganjam attached to most platforms, but throughout Vizagapatnam when we visited that district and at the works we inspected in Timnevelly, newly scraped salt was to be seen heaped upon the platforms where sales were carried on. Moreover at Negapatnam and Madras heaps of weighed salt brought by canal are allowed to lie alongside stored heaps. This is most objectionable and dangerous, as the purchasers of salt have often to pass between heaps of loose salt not brought to account, in order to reach the heaps at which sale is taking place; and facilities for the removal of salt in addition to that paid for are thus afforded. At the northern Madras works, the salt is heaped near the pans and along the banks of the canal to await transport to the depot, and the same is the case at Negapatnam, Velangani and Vedaranyam. No separate drying-grounds existed at the stations in Timnevelly which we visited. In all cases the only precaution, (besides the ordinary guard) taken as regards heaps of salt not weighed into store is to mark them with a rough wooden stamp.

182. The object of allowing the salt to remain for a certain time before weighing it into store is to protect the interests of Government by preventing its being taken while still containing a large amount of moisture. This object is often imperfectly attained, because the salt, instead of being spread out to dry, is heaped and the interior of the heap remains as wet as when the salt was scraped; and it seems a question whether, considering the facilities for fraud afforded by the delay which exists under present arrangements, a delay far greater than is required for the purpose, it would not be more profitable to Government to cause the salt to be stored

a few days at most, after it is scraped. We think that orders to this effect should be issued, the salt in the meantime being allowed to drain on the ridges. The provision of separate enclosures at all stations would be expensive and would entail increase of the temporary guards.

183. The marginal abstract, based on Statement 6 in the Appendix C

Districts.	Average interval between first scraping of salt and commencement of storage.	Average interval between cessation of manufacture and completion of storage.	Period during which storage continues.	Average quantity stored annually in the last five seasons.	Average quantity at or about subsequent to the cessation of manufacture.	Per cent.
	M. days.	M. days.	Mths.	T. maunds.	T. maunds.	
Ganjam.....	14	1	3.0	7,88,717	4,58,937	58.0
Vizagapatam.....	13	1	3.3	1,13,708	69,185	32.1
Godavery.....	13	22	3	3,34,586	3,18,778	94.7
Kistna.....	12	4	3.5	6,87,970	1,91,639	27.9
Nellore.....	12	26	4.1	7,42,000	76,704	10.3
Chingelput.....	12	18	3.5	17,89,773	5,36,495	30.1
South Arcot.....	10	23	2.3	2,03,755	45,133	15.2
Tanjore.....	20	1	5	6,18,601	2,49,480	40.5
Madura.....	17	20	7	3,68,822	1,18,733	32.7
Tinnevely.....	12	6	7.5	7,98,334	72,933	9.0
	2	1	18	55,70,572	12,33,633	32.4

shows the average interval in each district between the first scraping of salt in the several divisions and the commencement of storage, and between the cessation of manufacture and the completion of the work of storage, and also the period over which in each district storage operations ordinarily extend. The figures are obtained by averaging the periods which elapsed between the average dates of first scraping and cessation of manufacture at each division, and the 15th and last day respectively of the months in which storage began and ended. This method exaggerates the intervals; but the returns shew only the months in which storage began and ended.

184. From this abstract it will be seen that the interval between the first scraping and commencement of storage is generally greater than that between the cessation of manufacture and the completion of storage. This is possibly due to pressure at the end of the season in order to get the salt in before the rains come down. There is some reason to believe that while manufacture is at its height, the establishments are so fully occupied that the work of storage is put off; but, so far as the figures above given go, they do not support the opinion, the average proportion stored after the cessation of manufacture being usually less than that which the period subsequent to the cessation of manufacture bears to the whole period of storage. The exception is the Godavery district, where special orders sanctioning the postponement of storage have been passed.

185. In the Appendix will be found a statement giving the average quantity stored in each month in each district during the last five years.† In Ganjam and Godavery storage continues late, but, allowing for the normal interval between scraping and storage, the distribution of the storage cannot be widely different from that of the production. We were informed that storage at Pennugudum in the Godavery district is deferred under sanction of the Board until late in the season, when labour becomes available. The salt stored late in September and October in Vizagapatam, (vide Statement), was salt made in 1870, and at one division in 1872. On reference to Statement No. 6, Appendix C, it will be seen that on no other occasion was salt stored after August, and in most cases storage was completed in June and July. The salt stored in August and September in Nellore belonged to the Southern divisions where the season is later than in the north of the district. In South Arcot no salt was stored after September except in one year, 1873, when, under pressure of short supply, manufacture was continued till October. In Madura and Tinnevely storage continues through November and December, but the season there ordinarily closes in October, and the north-east monsoon is very light on the coast of those districts. In

* Vedaranyam is omitted from this Statement. Since May 1873, the storage of the salt of that station has been continuous. Vide infra.

† Appendix C, No. 7. Some Collectors have unfortunately misapprehended the meaning of referring to Fiscal years, and others to calendar years, and information as to the storage of 1875 is therefore incomplete.

two cases in Madura salt was not stored till January. It remains to notice the results for Chingleput and Tanjore. The salt shown as stored in December and January in the first named district is all referable to a single division in a single year, viz: Choyur in 1873. The manufacture there in that year began in May and continued till near the end of September, and the salt was not all stored till January. The storage of salt in November is accounted for in the same way, except as to 5,075 maunds stored at Madras in 1875, when an unusually large quantity (19,21,401 maunds) was made. The salt at the Madras division is usually fully stored in October before the monsoon bursts. The salt stored in Tanjore from December to January is almost entirely that of Vedaranyam stored at Negapatam. Since May 1873, there have been great delays in the transport of this salt, and it has gone on continuously, so that the storage of salt of one season has not been completed till far into the next. Great hardship has thus been entailed on the ryots, who are not paid for their salt until it is stored, and are obliged to cover it in at Vedaranyam at their own expense until it can be transported to Negapatam. At the other divisions in Tanjore salt is usually got in before the monsoon commences.

186. Looking at the figures as a whole, and bearing in mind the differences of season in each district and the exceptional cases which have been mentioned, it may be said that the bulk of the salt in each district is stored before the heavy rains set in, and that the completion of storage follows the cessation of manufacture with, as a general rule, no greater delay than is allowed to take place in the commencement of it as above noticed. Nevertheless it is apparent that considerable quantities of salt must remain exposed to rain and dew often for months, and, as the ryots rarely use any covering whatever to protect the heaps, the wastage before storage must be very large. There is also special loss when salt is transported from the pans to the depôts at Madras and Home's Gardens, and from Vedaranyam to Negapatam. The recent boat contract at Madras provides for improved transport, the boats being floored so as to raise the salt out of the bilge-water, and the coverings improved; but the boats are more or less leaky, and those used on the southern canal seem very inferior, and are overloaded. At the northern Madras works, the salt is covered in the boats with tarpaulins, but at Home's Gardens, no covering is used, and in Tanjore only mats. The transit of salt between Vedaranyam and Negapatam takes three or four days, but sometimes as long as twenty. Much salt must be lost in these transits; apart from the danger of theft entailed by the imperfect arrangements for the protection of the salt, which will be noticed hereafter. No exact account is kept of the weight of salt put into each boat, but an estimate is made of the quantity; and on examining the accounts at Madras we found particulars recorded as follows for the storage season of 1875, up to the 10th July, when the account stopped—estimated quantity despatched, Indian maunds 922,310; out-turn by weighment on arrival, 838,925 maunds; wastage or loss, 99,385 maunds, or 10.58 per cent. The loss in the more rainy months which follow would probably have been heavier. Going through some files of boat-notes at Vedaranyam, we found the loss to average about 12 per cent. These results depend upon the estimate of quantity, which is not very trustworthy; but the ryots at Vedaranyam complained loudly on the subject, declaring that they lost one-fourth of their salt, and that when they accompanied the boats themselves to Negapatam the out-turn was found correct*. Spontaneous salt transported on account of Government showed 6 per cent. wastage, and the ryots' loss could not have been less. The special loss in these cases, as well as all ordinary and extraordinary loss before storage, falls upon the ryots and not upon the State. But the amount of it is one of the points on which we have been specifically instructed to enquire, and we therefore made a special reference to Collectors for information regarding it. No accounts are kept of such losses and no exact information is available. We

* These statements of the ryots were probably coloured by their expressed desire to get back the old arrangement under which they conveyed the salt to Negapatam themselves for 7 Rupees a garce. The present contract rate is Rupees 5-2-0. The contract in force up to the month of February 1876 was at the rate of Rupees 7 and Rupees 8.

have, therefore, to depend upon estimates which give the following annual average for the five years ending 1284 :—

Districts.	Quantity lost to the ryots.	Per cent. of out-turn including loss stated.
	Indian Mds.	
Ganjam - - - - -	6,654	0.9
Vizagapatam - - - - -	(No return.)	
Godavery - - - - -	22,130	7.1
Kistna - - - - -	20,856	3.3
Nellore - - - - -	97,544	13.6
Chingleput - - - - -	145,168*	9.0
South Arcot - - - - -	11,700	2.6
Tanjore - - - - -	9,924	1.5
Madura - - - - -	5,705	1.8
Tinnevely - - - - -	9,988	1.5
Total...	329,659	5.6

187. To these losses must be added, if the rates based on the estimated quantities despatched can be accepted, 121,938 maunds on account of salt sent to Madras, and 69,598 maunds on salt sent from Vedaranyam to Negapatam; and the total ryots' loss would then be raised to 8.6 per cent. But it is evident that the estimates in other districts cannot be depended on; for variations so great as the figures shew cannot be real. It is pretty certain at least that the estimates are within the truth.

188. The loss, whatever it is, before storage falls upon the ryots. In very few cases, when owing to exceptional storms or floods the ryots' loss has been very great, compensation has been granted; but such grant is entirely matter of grace. The loss, however, tells indirectly against the Government; for so far as it is avoidable it necessitates higher rates of kudiavaram than would otherwise have to be allowed. That it is to some extent due to defects of system is unquestionable. The delay before storage is longer than it need be, and owing to the ryots' practice of heaping their salt, a consequence of the want of roofs in the drying-grounds or platforms, the advantage of delay, viz.: getting the salt dry, is to a great extent lost. If the salt were spread out on sufficiently ample drying-grounds, or on the ridges, a few days would suffice to let the moisture drain off, and to fit the salt for storage; and the magnesium salts would be more effectually got rid of. The point is one frequently adverted to by Dr. Ratton.

189. When the time comes for the salt to be stored it has, except in the special cases of Madras and Negapatam, where the arrangements for boat transport have already been described, to be carried to the weighing-ground at the manufacturer's cost. It is received by weight, and the standing orders lay down that the weighing shall be conducted in the presence of the manufacturer, the accountant, and the Superintendent. It would, however, be impossible for the Superintendent to supervise all in-weighments himself, and from the record of the heaps stored it appears that the duty is often delegated to Assistant Superintendents and Clerks.

190. The weighing machines in use have been already described (paras. 89—99). Let Grainger's "pan-scale" be represented by A, the "platform machine" by B and the "cup-

* Heavy loss by evaporation in 1281 and 1282.

† Board's Standing Order, No. 240, para. 2.

scales" of one and two maunds lift by C₁ and C₂ respectively: thus the following table shews the machines in use in each district:—

Districts.	Machines in use.	Districts.	Machines in use.
Ganjam*	B, C ₁ and C ₂	South Arcot§	A, B, C ₁ and C ₂
Vizagapatam	B	Tanjore	A, C ₁ and C ₂
Godavery	A, C ₁ and C ₂	Madura|| ... ..	A, B and C ₁
Kistna	B, C ₁ and C ₂	Tinnevely	A, C ₁ and C ₂
Nellore†	A, B, C ₁ and C ₂	Madurai*	A and B
Chingleput‡	A, C ₁ and C ₂	South Canara... ..	B

191. For in-weighment the cup-scales are never used, their lift being too small. The great objection to the platform machine (B) is set forth in the paragraphs of our report already cited, and we ourselves examined several machines of this pattern and found that the result depended on the position of the baskets on the platform, in fact that, as the Collector of Ganjam expresses it, the machine could, within certain limits, be "rigged." On the other hand, two of Grainger's pan-scales were tested by us and found very accurate, the error being in one case so small as 1 seer in 8 maunds. In the interest of the revenue the main objection would arise in connexion with sales; but it appears to us that an admittedly faulty machine should not be retained even for the receipt of salt. From either point of view we think it much to be regretted that the Board of Revenue should have deliberately allowed the retention of machines recognised to be defective and inaccurate. In passing such an order they can hardly have realised the importance of the interests involved. The average annual retail sales are shown to have been in the two years ending 1874-5, about 3½ lakhs of maunds. An error of 1 per cent. would, therefore, involve a probable loss of nearly three-quarters of a lakh of rupees, at the present monopoly price.

192. The arrangements for the test of the machines and counterpoises are very various. In some places standard weights seem to have been supplied to salt divisions, in others the Deputy Collector depends upon the weights at sea-customs offices. Elsewhere the test is made with rupees, a most inaccurate method. No rule on the subject of test is laid down, and in fact no real test is applied. We saw at several stations weights deeply corroded with rust and weights roughly adjusted with lead, sometimes loose pieces of lead attached with string. Adjustments were also made by lumps of bar iron placed on the platform scales in a manner only understood by the weighmen. We would recommend that beam-scales with moveable tripods should be substituted for the present weighing machines, that standard

* The Collector remarks that B can be "rigged," and inclines to recommend beam-scales.

† A is seldom used.

‡ In this district there is at the Madras storeyard one of Pooley's weighing platforms. Also on the adjacent railway sidings are two weigh-bridges capable of weighing 200 maunds at a time.

§ B considered more useful than A.

|| Only 3 divisions supplied with A, which is said not to be used because inconvenient.

* If used in the small depôts of Chowghat and Cochin, A elsewhere.

weights should be provided and rules laid down for the systematic testing of scale and weights.

193. The salt received into store is all massed together and formed into heaps without distinction of the particular manufacturer from whom it may have been received. It does not appear to be received in the order in which it is brought to the drying ground or after so many days' exposure, or indeed according to any fix rule. It must be an object with manufacturers to get their salt weighed in soon as possible, (1) because the better the salt, the heavier it weighs, (2) because the kudivaram is not payable till the salt is stored, (3) because the salt while lying in the drying-grounds is at the owners' risk and they have to bear any loss that may arise from rain or dust-storms. We have seen that delays in storage are no infrequent, and indeed with the present staff they are probably unavoidable. Priority of storage is well worth paying for, and the uncontrolled power of selection for storage now vested in storing officers is open to abuse. We have already recommended that the period for which salt shall remain to drain and dry at the manufacturers' risk should be defined, and we think that rules should also be laid down regulating the order in which the produce of different owners shall be taken into store. As each man's salt is weighed in, the quantity is noted in a rough weightmen account, which is totalled daily. These totals are posted in the station register and a receipt for the quantity delivered is, or ought to be, given daily to each manufacturer whose salt has been taken into store.

194. The salt is stored in heaps of 1,200 l. maunds (10 garce), except at Madras where the heap weighs 2,400 maunds or 20 garce. In all east coast districts north of Tanjore the heap is on an oblong base, the transverse section being a right-angled or obtuse-angled isosceles triangle and the longitudinal section through the ridge a trapezium. In Tanjore, Madras and Tinnevely the top of the heap is so constructed that the transverse section is something like a gothic arch. In the northern districts the heaps are thatched with straw or palmyra leaves, in the three southern districts the covering consists of a coating of about 12 inches of earth, the outer rind of which is mixed with a little clay. In South Canara the salt is for the most part stored in pukka buildings. Throughout our tour we found the heaps well formed and covered; the protection afforded to the salt being sufficient. The heaps are arranged in lines, each line and each heap in a line bearing a number. Thus a particular heap is defined by three numbers, the number of the platform, the number of the line, and the number of the heap in that line. The lines and heaps lie close together, (the rule says that there should only be room for one person to pass between two heaps, but this does not seem to be strictly observed). A small cut is made between adjacent heaps and lines, to carry off rain.

195. The platforms upon which the heaps are stored are rectangular enclosures, either lying naturally or artificially raised three or four feet above the usual level of water in the rains. The platforms should be level and the surface made of sand and enclosed by a ditch or hedge, or both. At many stations the ditches surrounding the platforms are connected with the supply-channels and kept full of water, the only passage across them being over a drawbridge, which is raised at night. Watch-towers commanding a view over the whole platform have been made in many places, and on them the police mount guard. The two last improvements are of recent introduction, under the orders of the Board of Revenue, and are being gradually extended to all stations. On the whole, the platforms we visited were in good order, though in some the moats were dry and the level of the floor not sufficiently attended to. A heap placed in a depression of the surface is obviously liable to unnecessary wastage from the water which must collect round its base.

* See Board's Standing Order No. 212.

196. Both storage platforms and drying-grounds are constructed at the expense of Government, who also, as a rule, pay for covering the heaps and partly for heaping the salt. The manufacturers everywhere carry their salt to the scales and assist in weighing and storing it, but, notwithstanding the distinct orders of Government cited in para. 69, the amount of assistance required from them in forming the heaps differs much at different stations. Outside labour is always more or less employed. In Nellore and Tanjore, however, the manufacturers are obliged to provide labour and materials for thatching heaps, the cost being expressly included in their kudivaram.

197. The Board's orders (Standing No. 203) as to the punctual payment of kudivaram are very strict. The Salt Manual provides for a fortnightly statement of kudivaram due being sent for the Collector's sanction; and the Deputy Collector is declared to be personally responsible that no delay takes place in the preparation of the account, or in the disbursement of the money when sanction is received. He is also, when at a salt station, to take the opportunity of himself making such payments as may be sanctioned; but in his absence payments are made by the Salt Superintendents, and this is the most ordinary case. There is no rule making it the duty of superior officers to ascertain that the payments of kudivaram really reach the ryots. The Form No. 11, however, provides for the signature of the manufacturers being taken in support of the payment. The cash required for kudivaram payments, may be retained from the remittances, the Collector's order being forwarded instead. The kudivaram of course cannot be paid until the salt is stored, and the delays in storage, to which we have adverted, accordingly produce corresponding delays in the receipt by the manufacturers of the price of their salt. We called upon the Collectors to furnish us with statements shewing the latest dates of payments of kudivaram in each division and for each of the last five years, and the results will be found tabulated in Appendix C, Statement No. 6. The Tanjore return was evidently wrong, and has been returned for amendment. For Chingleput a return has been furnished shewing the amount paid in each month, the payments ending each year in December. The Deputy Collector says that some small amounts always remain unpaid owing to disputes, which are unsettled sometimes for two or three years. On comparing the total payments for the four Faslis 1281—1283, with the amounts reported by the Collector elsewhere as due for salt stored in those years, we find that the Deputy Collector's return embraces very nearly the whole sums due; and we have entered accordingly the closing months shown in it in the last column of Statement 6, Appendix C. The average amounts and the percentage of the whole paid in each month in this district, during the 5 years ending 1875, are shown in the margin in contrast with the proportion of storage effected in each month. The figures indicate some delay at the beginning of the season, but on the whole the kudivaram seems pretty punctually paid.

	Paid. Rs.	Due. Rs.
1281...	2,02,042	2,03,503
" 1282...	97,931	81,389
" 1283...	2,04,436	2,21,971
" 1284...	1,00,905	99,079
	6,05,314	6,15,943

	Kudivaram paid. Rs.	Per cent.	Stored per cent. of total.
April	2,712	1.6	0.7
May	23,187	13.3	23.3
June	35,639	20.4	23.5
July	54,305	19.6	18.7
August	24,875	14.2	15.4
Sept.	28,126	13.1	6.6
Oct.	19,138	10.9	1.5
Nov.	6,561	3.9	0.4
Dec.	...	...	0.3*

198. In Nellore also some small amounts for 1875 were still outstanding, owing to a disputed ownership and the absence of a claimant, at the date of the Collector's letter. Circumstances of this kind evidently render returns of the latest date of payment of kudivaram inconclusive as to the punctuality, or want of punctuality, with which payments are made, and as to the prevalence or otherwise of the practice prohibited by the Board of putting off the bulk of the payments until the close of the season. The following abstract, however, shows the information we have obtained, and tabulated at length in Appendix C, Statement 6.

* Some salt was stored at Chayur in one year in January. Either it was not paid for till the following season, or it is omitted from the Deputy Collector's statement.

Districts.	Average period between cessation of manufacture and last payment of kadivaram.		Average period between cessation of manufacture and close of storage (supra para. 189.)		Difference.	
	m.	d.	m.	d.	m.	d.
Ganjam.....	2	8	2	1	0	7
Vinagapatam.....	1	28	1	12	0	16
Godavery.....	2	23	2	22	0	1
Kistna.....	2	16	1	4	1	12
Nellore.....	3	39	0	36	3	3
Chingleput.....	3	0	2	18	2	12
South Arcot.....	5	32	0	23	5	9
Madura.....	4	9	2	20	2	19
Tinnevely.....	2	24	1	0	1	24

The delay in payment shown in the difference column is great in Nellore, Chingleput and South Arcot, but especially in the last named district. Elsewhere, so far as the figures prove anything, it is not excessive. On looking into the details of divisions in Appendix C, it will be seen that there are apparently habitual delays at some divisions, e. g., Balacheruvu, Manginapudi, Chinna Ganjam, Tummalapenta, Krishnapatam, Dagarazpatam, Tada and Sumbapugunta; at all divisions in South Arcot, and at Vairavanadapatam in Madura. But as already stated, the time of the last payment of kadivaram is not any indication of that at which the bulk of the payments are made. The delay is here, it is to be observed, understated owing to the mode of calculation we have had to adopt regarding the completion of storage, explained already.

199. It will be seen when we come to describe the procedure of sale that the checks on the removal of salt from the platforms are very weak; and hence the stock account, with the necessity of bringing to the credit of Government the quantities shown in it, less allowance for wastage, is the only real check provided by the Madras system against fraud by the establishment. An accurate stock account is admitted to be a very valuable check for this purpose; and when it is relied on as at any rate the chief check, the question whether it is accurate, and whether all possible means are taken to make it so, is one of very great importance. The following Statement shewing the number of heaps re-weighed by Deputy Collectors and other superior revenue officers on the average of the last three years, and of heaps stored by inferior servants and tested by Superintendents for the same period, gives the result of enquiries on this subject.

Districts.	Average number of heaps stored in each of the last 3 years by Superintendents.	Average number stored by Assistant Superintendents and others.	Total average number of heaps stored.	Average number of heaps stored by Assistant Superintendents and others, tested by re-weighment by Superintendents.	Percentage of col. 5 on col. 3.	Average number weighed by Deputy Collectors and superior Revenue Officers.	Percentage of col. 7 on col. 4.	REMARKS.
Ganjam.....	...	729	729	11	1.54	19	2.54	The return does not discriminate between heaps stored by Superintendents and by other subordinates. It is presumed that all were stored by the latter. The return purports to show heaps tested by Deputy Collectors only. It is presumed that no other test took place.
Vinagapatam.....	206	...	206	...	...	14	6.79	Heaps stored by clerks not given separately.
Godavery.....	...	300	300	...	...	11	3.67	143 heaps stored by clerks, &c., and 2 by the Deputy Collector.
Kistna.....	40	394	434	...	...	3	.69	89 heaps stored by clerks. 2 heaps tested by the Sub-Collector in F. 1282 are included in column 7. The return is expressly limited to heaps tested by Deputy Collectors at times other than the time of sale.
Nellore.....	287	492	679	...	...	13	1.84	
Chingleput.....	116	737	853	3	.35	6	.76	
South Arcot.....	10	272*	272	...	...	3†	1.10	* 2 stored by Deputy Collector. † 2 tested by sale, and one by re-weighment.
Tanjore.....	420	247‡	667	...	...	5	.75	‡ 40 stored by clerks.
Madura.....	168	183	351	...	...	...	...	* 1 tested by sale.
Tinnevely.....	333	156	489	...	...	7§	.93	
Total...	1,780	3,431	5,211	17	.36	81	1.55	

The proportion of test here shown is undoubtedly quite insufficient. In one district, Madura, there has actually been no test at all. It will be seen that, with the exception of a heap here and there stored by Deputy Collectors themselves, the whole of the storage is performed by Superintendents, Assistants, and Clerks; and no less than 64 per cent. by officers of the last two classes, who receive salaries from Rupees 15 to Rupees 35. It is true that much of the salt so stored is sold by Superintendents, though it is a rule of the department, in view to fix responsibility, that salt shall as far as possible be sold by the officer by whom it was stored. Even if the rule were the other way, the check would be a very weak one, as there would rarely be any difficulty in the way of collusion between the storing and selling officers. The sole means, under existing arrangements, of securing the accuracy of the storage account is test weighment by trustworthy officers of superior rank, and we think that no less proportion than 15 or 20 per cent. so tested could be relied on to secure honest storage under present conditions.

200. The storage account is the back-bone of the Madras system; its accuracy, or supposed accuracy, is the only substantial check against fraud by the establishments; and we see that nevertheless practically no measures have been taken to secure its accuracy by re-weighment of heaps. The supervision by Deputy Collectors must be intermittent, and cannot, without sufficient test, be much check on the Superintendents and Assistants, by whom the storage and sale are carried out. These officers are practically uncontrolled; and, over-storage being so easy and so profitable, it would be indeed surprising if it did not exist. The storage and out-turn accounts are therefore to be regarded with suspicion, and the rate of wastage derived from them can hardly be accepted as real. But some analysis of these accounts will be expected of us; and indeed is worth making, since they furnish tolerably strong evidence in support of the opinion that over-storage, and consequently loss of revenue, exist. To what extent, it is of course, impossible to say;

but it is enough to remark that each one per cent. of over-storage would, on the whole sales, amount to 64,000 maunds a year, and the loss on it to about 1½ lakhs of Rupees.

201. The usual way of computing the wastage is to add the recorded wastage to the retail sales, and to find the percentage it bears to the total. But the wastage accrues not only on the retail sales, but on sales for export by sea, on sales to the French Government, and in fact on all salt disposed of otherwise than by sale of whole heaps without weighment. Salt for export seems to be weighed out everywhere at present, except in Tanjore, where it is sold in whole heaps, (but without discount) as containing the quantities stored. In Tinnevely the same procedure was followed up to 1874.* Returns of wastage for each Fashi year are furnished to the Board of Revenue, but, according to the form, they refer only to the heaps in which wastage occurred. They take no account of the heaps in which there was no wastage, or which actually contained excess. This excess, or "gain by weighment," is by no means an infrequent phenomenon; and making every allowance for inaccuracy of machines and mistakes in weighing, it means that over-storage exists. It is impossible that there should be no wastage; a result which purports to be realized in these cases.

202. We have prepared a Statement which will be found in Appendix C. No. 8, in which, by adding the quantity gained by weighment to the actual out-turn as sold, and subtracting the quantity returned as wastage, we get the originally recorded contents of the heaps, with which the gain by weighment, the wastage, and the net loss, so far as furnished by the accounts, can be compared. The results for each district are shewn for the two periods of five years from 1865-6 to 1874-5. The rates shew very great variations, from a net excess of 1.73 per cent. in Tanjore to a wastage of 9.62 per cent. in South Arcot in the first five years; and give a net wastage on the whole of 4.82 per cent. In the second five years the variation is from 1.17 per cent. wastage in South Canara to 7.09 per cent. in Vizagapatam; but there is no case of actual excess out-turn above recorded storage. In both periods the result for the whole Presidency is reduced by the low wastage in the West Coast districts. On the East Coast the averages for the two periods are 5.54 and 5.81 per cent., and on looking into the details it will be seen that in very many cases the wastage appears to be considerably over 5 per cent.

203. This result would, if true, be inconsistent with the existence of a wholesale trade at 5 per cent. discount. But it is apparent that the figures just discussed do not give the ordinary rate of wastage on heaps sold, since much due to special causes is included. We have been able to trace the following cases of special loss included under wastage:

Salt destroyed.		Lost in transit.	
	Indian Maunds.		Indian Maunds.
Chingleput.....	1873-74..... 840		
Chingleput.....	1865-66..... 65,322		
Chingleput.....	1867-68..... 1,11,803	Chingleput.....	1870-71..... 30,438
Chingleput.....	1865-66..... 11,531		
Chingleput.....	1862-70..... 4,497		
	1,00,890		
Lost by Cyclones.			
Vizagapatam.....	1862-70..... 4,415		
Vizagapatam.....	1870-71..... 2,753		
Ratan.....	1868-69..... 3,130		
Chingleput.....	1866-67..... 4,203		
South Arcot.....	1860-61..... 26,773		
Tanjore.....	1871-72..... 12,054		
Tanjore.....	1872-73..... 20,301		
	50,471		
		Five.....	
		Malabar.....	1872-73..... 19,338

As far as we can find, the quantity of salt thus lost was ascertained by restoring the salt; but besides the losses here given there were large losses in Chingleput

* We state these facts on the authority of the Salt Deputy Collectors of the two districts. We have enquired also the practice in other districts also. Salt for export is stated to have been weighed even when sold by measurement prevalent.

subsequent to the cyclone of 1872, which were discovered when the heaps which had been exposed to it were brought to sale. The wholesale merchants refused to take these heaps in the gross, insisting upon actual weighment; and the consequence was, (*vide* Appendix B), that the retail sales of 1872-3 and 1873-4 increased enormously, while the wholesale sales fell proportionately. The quantities in the damaged heaps, and the wastage, are given in G. O., 5th May 1874, No. 552, as follows:—

	Stored.	Out-turn.	Wastage.	Per cent.
Indian Maunds.....	9,90,939	8,75,424	1,15,495	11.68;

and to get the ordinary wastage of the district these quantities must be deducted from the out-turn, recorded contents, and wastage already given. In the other cases, the special losses have merely to be deducted from the wastage, and column 4 (recorded contents) to be taken revised to shew the contents of the new heaps formed. The second wastage Statement (Appendix C, No. 9) gives the results. In the first five years three districts shew a net excess in out-turn, one of them, Tanjore, to the extent of 4.46 per cent.; and the range from this result is to 6.99 per cent. wastage in Godavery. The result for the Presidency is a net wastage of 3.63 per cent. In the second five years no district shows an actual excess, and the range is from 0.17 per cent. wastage in Malabar to 6.86 per cent. in Vizagapatam. The average for the Presidency is 3.93 per cent.

204. The rates thus show extreme variation in different districts which cannot be explained by differences in the quality of the salt, in the climate, or in the mode of storage. The practice of covering the heaps with earth, which prevails in the southern districts and which is undoubtedly more efficacious as well as cheaper, cannot explain the great difference which exists there. It will be noticed that in these districts, as well as others in which the wastage is low, the gain by weighment is high—a sure sign, in our opinion, of irregularity in storage. The Tanjore district is the worst of all in this respect; but on the west coast, notwithstanding that in those districts salt is transferred to a considerable extent from division to division, a process necessarily involving loss, the rates are also very low; and though the salt is stored in covered godowns, it is impossible to doubt that overstorage exists here. We obtained from the Collector a return shewing separately the out-turn of Tinnevely salt imported, and it shewed no wastage at all, but actually an excess. This is the salt which is complained of by the people of Malabar as melting away in that climate. The Tinnevely salt contains considerable moisture and magnesium salts, and is one of the most deliquescent made. The explanations put forward to account for the excess out-turn are, that the Superintendents, fearing to get into trouble about wastage, give short weight, and that the salt absorbs moisture after storage. The former seems to us utterly inadequate, and the latter cause, if real, would be likely in itself to cause wastage. The average rates of wastage throughout the Presidency judging from experience elsewhere with salts less liable to waste, (though, the absence of full information as to conditions of storage, such reasoning is dangerous), seem suspiciously low. The figures of the second five years shew less extraordinary variation in the rates, as between district and district, and the average is on the whole higher than in the first five years; and it is only fair to remark that the weighing machines in the earlier period were known to be very inaccurate, so much so that a return to measurement was actually proposed. At the time of Mr. Plowden's report the recorded wastage was between 2 and 3 per cent. From the results of recent years it may be fairly argued that a considerable improvement has taken place in the direction of accurate storage. It may be, however, that the improvement is only apparent, and results from greater astuteness on the part of the establishments in appropriating to themselves the overstored quantity; and in reply to the argument, which will doubtless be urged, that the crediting excess out-turn to the State argues, not dishonesty, but honesty in the subordinate officers, we might reply that all it proves is that they are contented with comparatively small and trifling gains, when they might make larger, but with increased risk of detection.

205. Even supposing that the test of storage were much better than it is, we should consider that the wastage returns which we have been analysing furnish clear evidence of the existence of irregularities; but knowing as we do that there has been practically no test at all, and that the bulk of the salt is stored and sold by officers on very low salaries who have opportunities of making large profits, we are decidedly of opinion that overstorage must prevail, but we cannot even hazard a conjecture as to the extent. It is important to remark that, so far as the prime cost of the salt goes, the illicit gains of the subordinate establishment by the process of overstorage must be effected in the first instance at the expense of the suppliers of the salt; and thus the kudivaram rates tend to become proportionately enhanced. Hence this loss, as well as that of the duty on the salt, eventually falls upon the State.

206. It is evident that the wholesale system must afford considerable facilities for concealment in cases where overstorage does prevail; and that immense loss may be thus entailed upon Government. Where the accounts shew net wastage of less than 5 per cent., it is certain that at least the difference is lost; and an estimate of the loss of revenue under the discount system will be found in the chapter on cost of salt. Of course an estimate is only possible on the data which we have; and falls short of the real loss in the degree, whatever it be, in which the real out-turn exceeds that which is reported. The wholesale merchants admit that they make profit out of the discount,* and we may remark that the wholesale trade flourishes where the reported wastage is low. In Godavery, Vizagapatnam and South Arcot, where the rates are high, there are scarcely any wholesale purchases; but Madura and South Canara are instances the other way, shewing a low rate of wastage, but no wholesale sales. Madura, however, has no inland trade; and the conditions of the trade in South Canara, where the salt for inland consumption is for the most part taken in small parcels for carriage by cart, may perhaps account for the fact in that district.

207. Salt may be purchased either wholesale or retail. The minimum quantity sold wholesale is an entire heap, the minimum of retail sale is one maund. The purchase may be made either under the credit rules or for cash. The method of opening a credit has been briefly described in para. 122. Cash may be paid either into any Tahsildar's treasury in the district or to the cashier (shroff) of the works whence purchase is intended to be made. In the case of cash paid to the shroff, that officer first notes in his daily cash-book the name and destination of the trader, the quantity of salt to be delivered and the sum paid, distinguishing sales for home and sales for inland consumption. He then grants the buyer a receipt for the amount. In the case of a credit opened or cash paid into a treasury at a distance, the buyer obtains a receipt from the Superintendent, the following procedure being the same in all cases. The purchaser, when he desires to take delivery, presents his receipt to the Superintendent or Assistant Superintendent in charge of weighments, who, if the sale be a retail one, weighs out to him the quantity covered by the sum paid, or, if the sale be wholesale, points out to him what heap or heaps he is to take. The transaction is entered in the sale account, which shews the heap from which delivery is made, the name and destination of the trader, the quantity delivered, (home and inland sales being distinguished), the nature of the sale (wholesale or retail), the kind of carriage and number of coolies, vehicles or animals, and the name of the officer conducting the sale. Heaps should be sold in the order in which they stand, or in other words, in the order in which they have been stored and for retail sale only one heap should be opened at a time. We have, however, reason to doubt whether this rule is always observed. At one work in Vizagapatnam we saw heaps standing in such a way that the rule could not have been complied

* At Madras and Negapatnam the wholesale purchasers retail salt to bazarsmen on the very platform or the outside of it, and have practically stopped retail sales by Government altogether.

† See Board's Standing Order, No. 217.

‡ i. e. in the district of mines.

§ i. e. any place beyond the district of mines.

with, and a District Superintendent of Police informed us that he had witnessed actual breaches of the rule. It is also laid down* that the same Superintendent and Accountant who open a heap shall conduct the sale of it to the end.

208. Weighment is made with the machines already described, the cup-scales being used for the smaller deliveries. We have already, (see paras. 190—192), when noticing in-weighment, expressed our views on the efficiency of the machines employed, and need not here repeat our remarks. The head constable in charge of the salt police of the division keeps tally of the weighments as well as the salt officials, and also watches that the weighmen do their duty accurately. On delivery of the salt, if sold retail, the officer in charge of the sale gives the buyer a simple pass with his name and the quantity of salt to be allowed egress from the platform. This pass does not specify the number of bags, baskets or other packages in which the salt is carried from the platform. In some places the pass is given in duplicate to the trader, and each pass is signed by the head constable as well as by the salt officer. The pass, or a copy of it, is given up to the constable at the platform gate, and the passes thus collected are, or should be,† daily forwarded by the police to the Deputy Collector. We are informed that in retail sales at the Madras stores the salt must be bagged. If each bag must contain a certain quantity, the constable, (if he can read), has a certain rough check on the quantity passing out. Elsewhere he has absolutely none. We ourselves saw the process at the Ganjam works. A trader took delivery of 24 maunds, which quantity was measured out to him in 4 lifts of a platform machine, 6 maunds at a time. Each time the machine was loaded, a swarm of coolies carried off the salt baskets to the carts which waited outside the platform. The gate-constable had no means of knowing whether they carried out in the total 24 maunds or double that amount.

209. The salt officer endorses on the shroff's receipt, which the buyer gives up, the amount of salt delivered and the number of the heap. These receipts so endorsed are sent daily to the Deputy Collector. The idea is that, compared with the passes, they afford a check on the amount of salt passed out. Even if the comparison is ever made, it is clear that they are quite useless in this respect. In the case of salt sold retail, Government pays for digging it out of the heap, and carrying it to the scales; heaps purchased wholesale are removed by the purchaser at his own cost, within a time which varies in different places. At Madras he is allowed 7 days to clear a 10-garce heap, and 15 days to remove one of 20 garce. We would recommend that, except in small deliveries, say not exceeding 2 maunds, all persons buying salt should be obliged to bag their salt before weighment.

210. We have already in the Historical chapter traced the origin of the system of discount on wholesale sales and shewn that it was in its origin a trade discount, and that the theory of its being given to cover wastage presumed to exist in the full heaps sold is of subsequent adoption. But besides the ordinary wholesale discount of 5 per cent., special discounts, extending in some cases to as much as 25 per cent. of the full price, have been granted for various reasons, as, for instance, in order to stimulate the sale of old or inferior stock, or to clear off stocks at stations where the stores were excessive, or which it was desired to close. They have, in a few cases, been granted on retail as well as on wholesale sales. We have to remark with regard to these heavy discounts that it must always be impolitic to sell salt for less than the net excise ordinarily realized; for such salt displaces in consumption salt on which the full duty would be obtained, and thus leads to loss of revenue. It would be better to destroy salt not saleable at the net excise rate; because the cost of the salt which it would displace if sold, would always be recovered in the full price. We shall notice in the chapter on cost an instance in which, as it is appears to us, a special discount with a view to force the sale of a particular kind of salt, has been sanctioned on mistaken principles. These special discounts at any rate should all be abolished.

* Board's Standing Order, No. 200, Clause 15.

† See Board's Standing Order, No. 215.

211. As regards the ordinary discount we have shown in our analysis of the wastage appearing in the accounts that, even on the facts recorded, a heavy loss of revenue must accrue. There is no doubt that the system tends powerfully to diminish price to the consumers; but it is obvious that this effect is produced by what is in fact a remission of revenue. The prices received by the merchants for the salt which, under the system, they obtain for nothing and duty-free, enable them to reduce their surcharge on the salt for which they pay. We very strongly recommend the abolition of the discount system, and the issue of orders requiring the weightment in full of all salt sold. This course will in several districts necessitate an increase of establishment and consequently of charge; but we are convinced that the expense will be repaid manifold. Indeed we believe that if sufficient test of storage be introduced—a measure which is obviously necessary and would be inexpensive—such increase of establishment will necessarily follow. For if accurate storage were introduced, the proportion of wastage which is now less than 5 per cent. of the recorded contents—though doubtless not so of the real contents—would rise, and the out-turn would come to be less than 95 per cent. of the quantity recorded as stored. The merchants would then cease to buy full heaps, and to incur, as they now do, the expense of weighing out the contents, when they might get that operation performed for them without charge by the officers of Government. Even if the discount were fixed, not at 5 per cent., but at such rate as would no more than cover the real average wastage, the system would be objectionable, as, owing to varying circumstances affecting wastage rates, it would never be certain that salt in particular cases was not being passed into consumption duty-free.

212. The credit system has also been sufficiently described in the historical chapter. It does not appear to have entailed loss upon the State, and indeed it is not, we believe, much used except at stations such as Madras and Negapatam, where wholesale sales are large. It has considerable effect in cheapening the salt, for owing to the length of the credit, (six months,) the merchant is able to realize and deposit afresh the proceeds of the salt obtained on his first deposit, and thus to carry on transactions equivalent to four or five times his real capital. We see no objection to the system except that the length of the credit may cause some inconvenience and derange the finance accounts, since the actual revenue credited cannot correspond with the quantities of salt issued. This inconvenience, however, attends in a greater or less degree any system of credit.

213. Salt for export by sea is supplied at rates intended to cover the cost of the salt, without duty, and special provision is made at certain selected places to meet the demand. Information as to these places, the rates charged, and their remunerativeness, will be found below in the chapter on cost of salt. The salt for export is usually stored on special platforms, and the quantity available for export at each place is notified by the Board in the *Gazette* once a fortnight. Export, however, is not strictly confined to these selected places, but Collectors are directed to allow export from any station where the state of stocks admits it.

214. The arrangements for protecting the revenue against loss through salt declared for export being afterwards brought into consumption in India without having paid duty, appear to us to be extremely lax. The sole object sought is to secure that the salt is actually placed on board the vessel, but there is little to prevent its being re-landed even at the place of shipment. Para. 5 of the Board's Standing Order, No. ²⁹²/₁ is as follows:—"An officer will be sent on board to watch the shipment of the salt, and a peon will accompany each boat to, and from, the shore. Exporters will be charged 1 Rupee per diem as batia for the former, and 4 Annas per diem, together with 2 Annas for each boat trip, for the latter." The subject is also noticed at p. 14 of the Salt Manual, but the directions there given, so far as they do not relate to the supply of boats—a matter now arranged for by the

exporters themselves—are to the same effect, except the following passage: "When the whole salt is weighed and shipped, the exporter or his agent grants a receipt for the same, on which a printed permit is furnished to the commander of the vessel." At Tuticorin we enquired into the process of export in detail. The salt is there, after weightment on the platform, bagged by the exporter, and a peon accompanies the bags to the shore, where boat-notes are made out, and sent off with each boat-load in charge of a peon. The boat-loads are verified by the Assistant Superintendent or clerk sent on board to superintend the export, the notes are signed by the commander and returned to the Superintendent on shore by the peon who brought them. When the shipment extends over more than one day, the salt on board is heaped and sealed by the Assistant Superintendent when leaving for the night. When the shipment is completed, the Superintendent sends a letter to the customs authorities, stating the name of the exporter, the quantity, the name of the vessel and its destination; and when salt is exported from any station other than Tuticorin, it is required to pass through that port. We heard nothing at Tuticorin of the grant of a printed permit to the commander.

215. The intimation to the Sea Customs authorities secures, it is presumed, that the salt is entered in the vessel's manifest; but this would be of value only if verification of the salt at the port of arrival could be relied upon. Once the salt is shipped, nothing more is heard of it by the Salt Department, no provision being made for obtaining a certificate or any intimation of its having reached its destination. Most of the salt is exported in native craft, and these would have ~~great~~ difficulty in re-landing it at points on the coast, which, except at the sea-ports, is entirely unprotected. Deficiencies at ports of arrival where there is no salt duty, e. g., the Straits Settlements, would probably pass unquestioned altogether, and in any case, excuses as to wastage or loss upon the voyage would be readily accepted. What follows will show that some further precautions, and enquiry as to what becomes of the salt exported, are very desirable.

216. We obtained from the Collector of Tinnevely lists of the shipments of salt at export rates from that district for Malabar and Travancore in Faslis 1284 and 1285, and from the authorities of the last-named places lists of cargoes arrived. In Fasli 1284, 73 cargoes aggregating 2,36,467 Indian maunds were exported through a private merchant from salt works in Tinnevely to Malabar. Four of these cargoes, amounting to 11,233 Indian maunds, never arrived, and nothing was known about them till our enquiry. We found that three of them, manifested for 7,058 maunds, landed 7,126 maunds in Travancore, (owing it is said to stress of weather, but the absence of wastage, and excess landed, tend to negative this plea), and the fourth vessel with 325 maunds is reported to have been wrecked. The cargoes arrived at any port showed 2,17,167 maunds landed; the wastage being thus 3.56 per cent. On examining the consignments and arrivals in Travancore, we find that 1,14,645 maunds were exported in 37 cargoes. One vessel, the "Amrita Lakshmi," with 7,200 Indian maunds, did not arrive in Travancore, or Malabar. On the other hand, a vessel named the "Morning Star," arrived with 2,784 maunds of Tinnevely salt which were not obtained from the Government works, and a vessel named the "Mohideen Bux" brought three cargoes to Travancore, but is credited in the Tinnevely list with only two. The "Morning Star" on another occasion sailed with 3,600 maunds but landed only 666 in Travancore. The quantity exported in the cargoes which arrived was 1,07,445 maunds, and 99,353 were landed—the difference being 7.5 per cent. against 3.56 per cent. in the cargoes for Malabar. In the following season there were no exports to Malabar, but 1,14,510 maunds were shipped for Travancore, of which 1,12,309 arrived—wastage only 1.9 per cent. In this year several cargoes showed excess on landing.

217. The great differences in the average wastage, which are intensified of course in details of vessels, and the fact that some vessels never arrived at all,

* These are not due to omissions at the Deputy Collector's list, since the total of the exports given by him, are not only equal to, but slightly exceed, the quantity given in the stock accounts as exported.

while others arrived which had not been loaded from Government works*, evidence, we think, irregularities fraught with grave danger to the revenue. It is we, think, necessary to refuse salt for exports to British Indian Ports, including Travancore, unless either full Madras duty is deposited, or tangible security given for its payment in the event of landing certificates not being produced within a fixed time. Draw-back of the Madras duty would of course have to be allowed and provided for by law, as in the case of Bombay salt at present, on salt landed at British Indian Ports; and refund made, or security released, in the case of salt landed in Travancore or Cochin. We would rule, and strictly enforce the rule, that in no case should any allowance be made for wastage on the voyage. With proper precautions in the shipment this wastage should be reduced to a very small amount, and the risk is one which shippers can bear. An average rate which would apply to all exports could not be laid down, and would in any case work unjustly. For such allowance would be insufficient in most cases of real loss by stress of weather or misfortune, and would be excessive in ordinary cases. To fix any rate would lead to continued petitions and pleas *ad misericordiam*, and we think that it would be better to lay down and adhere to a strict rule that no allowance for wastage should be made. For salt sent to foreign ports and ports beyond the limits of British India, we think that no arrangements, short of prepayment of full duty, will adequately secure the British revenue. It might however be possible, if satisfactory arrangements were made with the authorities at such places, as for instance the Straits Settlements, for strict verification of salt landed and for grant of landing certificates, to admit exporters of salt to such places to the same privileges, as to deposit of duty or security for it, as we propose should be allowed to exporters to places in British India.

218. The forms or statements in which were recorded the history of each season in respect to the manufacture, storage and sale of salt were very thoroughly revised in 1855, and a uniform series was prescribed in place of the various systems previously followed in the different districts. The new series was published with an explanatory memorandum under the title of "Manual of Instructions for the preparation of accounts in the Salt Department" and, with the exception of a few forms which have become obsolete and one or two which have been modified, still guides, or is supposed to guide, the officials of the Salt Department. It does not seem to have been ever systematically revised, and some forms are retained which in their existing shape are really obsolete; *e. g.*, (as we have seen above), some of the stipulations in the form of annual agreement or *muchalka* between Government and the manufacturing ryots.

219. The scheme on which the series of forms was drawn up is thus explained in the official memorandum of the Secretary to Government, dated 8th September 1855, submitting them for the opinion of the Board of Revenue:—

"This system is based, as every sound system of accounts must be, on uniform records to be kept in the offices at the bottom of the scale, wherein certain particulars are to be duly registered from time to time as the transactions occur. The particulars so recorded are to be transferred to figured statements in prescribed forms to be submitted to next superior offices; and the contents of all the statements thus received from the subordinate offices are to be then condensed and digested into more abstract forms, some the use of the superior local office itself in controlling and checking the lower offices, and so, for submission to the central controlling office at the Presidency.

"It is chiefly and almost solely with reference to these last that the whole system is contrived, viz. with the intention of so framing the ultimate statements that they shall exhibit a faithful representation of all the transactions of the department such as shall suffice for the purposes of check and control, and at the same time in a convenient and clear form; and prescribing such records and returns to be kept in and submitted by the inferior offices as shall supply the requisite information for this purpose."

* It would never pay to export duty-paid salt from Travancore for sale in the Travancore Government, and to pay fresh import duty in that State.

220. Accordingly the forms prescribed in the Manual divide themselves into three sets, (1) those to be maintained in each salt division, including those to be forwarded to "the Huzur," (they now pass through the Deputy Collector, but Salt Deputy Collectors were not in existence when the Manual was prepared), (2) those to be maintained in the Collector's (or now-a-days the Deputy Collector's) office, and (3) those to be forwarded to the Board of Revenue.

221. The first set numbers 26 forms, several of them of an elaborate kind. The chief ones may be briefly noticed.
Divisional records.

No. 1 is a register of salt pans showing the number of the fields "as fixed by the survey or local usage," the names of manufacturers, the "partikat number" or the number of the individual manufacturer, the rate of kudivaram and the number of pans, old and new pans being distinguished. This register is to be corrected from time to time by means of Form No. 4 the "register of transfers."

No. 2 is the "statement of partikat ditam" with the "muchalka" endorsed thereon. This has been already sufficiently described.

No. 3 is an abstract of No. 2 forwarded to the Deputy Collector.

No. 5 shows the daily estimate of salt scraped by each manufacturer, the quantity weighed into store and the remainder.

Nos. 5A and 6 are special to Chingleput, owing to the storage of salt at a distance from the pans and its conveyance to the place of storage by boat.

No. 7 is a weekly statement to be submitted to the Deputy Collector, showing the estimated quantity scraped and the quantity weighed into store up to date.

No. 7A is a similar statement modified to suit the conditions of Chingleput.

No. 8 is a detailed daily account of weighment into store, shewing the estimated quantity, and the quantity given by actual weighment, the platform, line and heap in which each ryot's salt is stored. The form No. 8A, is the same modified for Chingleput. 8B is also peculiar to Chingleput.

No. 9 is a register of salt received into store from each individual and the kudivaram due thereon.

No. 10 is a form of receipt for kudivaram.

No. 11 is the individual abstract of kudivaram forwarded once a fortnight to the Collector for sanction to disbursement of the amount due.

No. 12 is the cashier's daily cash account.

No. 13 is the daily account of salt delivered, described above in para. 207.

No. 14 is a daily account of salt sold for exportation.

No. 15 is a daily register of the destination of salt sold. An annual abstract of this is to be forwarded to the Collector.

No. 16 is a statement of the out-turn of each heap.

No. 17 is a monthly abstract, shewing in detail salt in store, received and sold, and the ascertained wastage.

Nos. 18—23 need not be noticed.

No. 24 is a monthly abstract of receipts and sales to be submitted to the Collector. There are enclosures to this return, shewing (a) particulars of previous years for comparison, (b) and (c) the kudivaram payable, (d) particulars of salt exported by sea, (e) out-turn of each heap, (f) the number of heaps sold and their out-turn.

"The control required on the part of Collectors should not, however, be such as to lower the office of the Deputy Collector, so as to disgust him or bring him into disrepute. It should be of such a character as every efficient, active, honest subordinate officer would rather see exercised than not, inasmuch as it would strengthen his hands and bring to light his good conduct and zeal in the service. The control must not be merely nominal, but real, and should make itself felt in every department of the work."

229. The duty of a Sub-Collector in regard to pans situated in his sub-division is thus laid down:—

Sub-Collectors.

"When pans are situated in the sub-division, the Sub-Collector should similarly inspect them periodically. He should see that the Board's orders are properly carried out, and his authority will extend to the issue of any instructions which may be required for the immediate correction of irregularities; but any suggestions and recommendations which are not within the scope of existing rules must be referred for the orders of the Collector, with whom the supreme control will remain. The Sub-Collector might greatly assist the Salt Deputy Collector when the latter visits his division."

Another Standing Order, (No. 243) directs that "all salt factories" shall "be visited at least once a year by Collectors, Sub-Collectors, or Assistants, during the manufacturing season."

230. The Salt Deputy Collector is a member of the uncovenanted service and draws pay according to his position therein, the officer posted to Chingleput being given an extra allowance of Rupees 100 per mensem. His head quarters are either at the Collector's station or at the most important site of manufacture in the district. He is aided by a ministerial establishment, the normal strength and pay of which is shown in the margin. The Deputy Collector of Chingleput has a somewhat stronger and more expensive establishment. The peons also draw an extra rupee per mensem. The Ganjam Deputy Collector has an extra clerk to aid him, his district standing second in the list according to amount of salt produced. The smith whose duty it is to look after the weighing machines and who generally receives Rupees 20 per mensem, may be regarded as attached to the Deputy Collector's establishment. At the date to which our information relates there were no such mechanics in the districts of South Arcot, Tinnevely and South Canara.

	Rs.	per mensem.
1 Head clerk	45	do.
1 2nd do.	20	do.
1 Attender or daffar-band	8	do.
3 Dhalaits or peons at 7	21	do.
1 Sweeper, or mashaal-chi	6	do.
Total	100	

of salt produced. The smith whose duty it is to look after the weighing machines and who generally receives Rupees 20 per mensem, may be regarded as attached to the Deputy Collector's establishment. At the date to which our information relates there were no such mechanics in the districts of South Arcot, Tinnevely and South Canara.

231. Subject to the "supreme control" of the Collector, the Salt Deputy Collector has the executive charge of the whole department in the district to which he is posted. He should frequently visit the various works and exercise an active supervision. All the returns submitted to the Collector pass through his hands. An order of the Board, (No. 300) requires him to submit to the Collector a brief weekly diary shewing his "proceedings in the administration of the salt department." He is also to forward to the Collector copy of all orders of the following kinds:—

1. for commencing or closing manufacture;—
2. regarding transfers of pans;—
3. temporary arrangements made for cultivation of pans left waste by holders;—
4. regarding transfers of, or leave to, officers above the grade of peon;—
5. regarding arrangements for the production of good salt or the mode of manufacture;—
6. authorising the rejection and destruction of manufactured salt;—
7. orders of an unusual nature, and not falling within the category of routine proceedings.

* Standing Order, No. 200.

The orders of the Collector must always be obtained for the assignment of new pans, or of old pans to new holders.

232. We find that all the present Salt Deputy Collectors have been promoted from other departments, e.g., from tahsildarships, or inspectorships of police. But, perhaps, in the present state of the subordinate salt establishments and especially as the re-organisation only dates from 1863, it is hardly to be expected that things should be otherwise.

233. Immediately subordinate to the Deputy Collector are the Superintendents of Divisions. In the manufacturing districts, these officers are arranged in six grades as follows:—

	21 on Rupees 50 per mensem.
Establishment for supervision of manufacture and storage and or conduct of sales. Superintendents.	8 " " 60 " "
	14 " " 70 " "
	5 " " 85 " "
	6 " " 100 " "
	3 " " 125 " "

There are two exceptional appointments; (a) that of the Superintendent of the Madras stores, who, in consideration of the importance of his charge, though he has nothing to do with manufacture, draws Rupees 200 a month, and (b) that of the Superintendent at Vaderhobli in South Canara who only gets Rupees 40 a month. The salaries are not personal, but local, being roughly adjusted according to the importance of the several charges. To the above list must be added 15 Superintendents in South Canara and Malabar drawing from Rupees 25 to Rupees 60 a month, who are in charge of sale depôts only. As a rule, the Superintendent at a manufacturing division, has at least one Assistant Superintendent to help him. The maximum number in any one division is six at Attipat in Chingleput. Altogether there are 102 Assistants with pay varying from Rupees 15 to Rupees 35 per mensem according to the importance of the station. Attached to each division is also at least one cashier (or "shroff") and a small ministerial establishment; also a staff of peons, measurers, (who would now be more properly called weighmen), and "vettians." The peons and weighmen generally receive Rupees each per mensem and the vettians Rupees 5. In Madras, however, rates higher than one rupee appear at some stations.

234. The Statement in Appendix C, No. 11, shews for each division and district the administrative agency in all grades from Deputy Collector downwards, also the area of land occupied by works and the average amount of salt received into store during the 10 years ending 1284 Fasli. The establishments are as they stood in 1874-5, no material change having taken place since then. Cashiers have been included under clerks, and peons, weighmen, vettians and sweepers have been classed under menials. To give a clearer idea of the component elements of the staff of a salt division, a few divisions have been selected and their establishments shown in detail. Nowpada is a large work, but has no sub-stations; Pakala is a fair average division; Iskapalli is a division of small out-turn; Attipat is an important division in Chingleput; the Madras kotaur or store is quite exceptional; the Gundam division has an especially large number of sub-stations. These instances will, we think, sufficiently illustrate the varying conditions of the different divisions.

235. The Superintendent, assisted by his subordinate staff, has immediate charge of the manufacture, (so far as it is controlled by Government officers), of the weighment, storage and sale of salt, and is responsible for the maintenance of the proper records and accounts. The police guards are, however, not under his orders.

236. Of 55 Superintendents whose services have been analysed, 36 appear to have risen through the lower grades of the department, and 5 others had previously served therein, though immediately promoted from posts in other branches of the public service, while 14 were appointed without any previous training in the department.

237. The central control of the entire administration is entrusted to the Board of Revenue, and with that body, subject of course to the orders of Government, rests the decision of all points both of executive management and of revenue.

238. We have already noticed that it has been proposed more than once to appoint a separate head of the salt revenue department. The measure was strongly urged by Mr. Plowden, chiefly on the ground that the Collectors, by reason of the extent of their districts and the multifarious nature of their duties, were unable to exercise the necessary control over the local officers. Mr. Plowden's proposal was not adopted, but instead special Deputy Collectors were appointed to aid the Collector in this particular branch of his work. This was certainly a step in advance, but we doubt if the administration is even now in a satisfactory state. The circular of the Board of Revenue cited in para. 228 above shews the nature of the control which the Collector is expected to exercise. The instructions are excellent, but we have no hesitation in saying that they are never carried out in practice. Indeed the Collector of a district like Nellore or Chingleput, with a large number of salt stations, could not carry out the Board's orders without neglecting his other duties. Of the points enumerated by the Board as those to which a Collector should look, we have shewn that the only test in his hands for ensuring correct storage has been generally neglected, the accounts and records are far from being in good order, and, if we may judge from our own observation, "regularity, order and discipline" are the very points in which the establishments are most wanting. This is, however, by no means altogether the fault of Collectors or Deputy Collectors, for the establishments are, in our opinion, neither sufficiently strong nor well enough paid to secure efficiency; but to this point we shall return. We were moreover much struck by the want of unity in the administration. The control of the Board of Revenue is of a very general kind, and as we have already remarked does not effectively extend to executive details. Hence each Collector administers the salt department of his district almost independently, isolated from, or even in rivalry with, his neighbours. Thus there arises not only a want of uniformity, but positive loss to the revenue. Stations may be opened on local considerations which would never have been opened on a larger view of the question, and improvements and economies carried out in one district may be unknown in the next. A comparatively well-managed district may be next to one where the administration is positively bad. We noticed also a want of intelligent interest in the working of the salt revenue as affecting the people generally. When salt passed beyond the works it seemed to pass from the thoughts of most officers, and we have had considerable difficulty in getting a correct view of its general distribution. An attitude of intelligent watchfulness on this and other points which indicate or afford means of inferring danger to the revenue is very desirable. The want of a general yearly review of the operation of the salt revenue in its broader aspects has, we think, contributed to the defects observed.

239. The present Deputy Collectors when first appointed had no training in the salt department. Several of them have, nevertheless, since then acquired much experience and fulfil their routine duties with moderate efficiency; but the duties are not popular, and, as long as the service is not a separate one, the salt Deputy Collectors will naturally look to a transfer to other work.

240. To secure a real control of the local officers, i. e., the officers in charge of works, we consider it essential that Collectors should be relieved of the control of salt revenue, and that it should be entrusted to a separate head of department, and that the officers under him should constitute a separate branch of the public service. The appointments would rest subject to the approval of Government with the head of

the department. The object aimed at should be to secure a class of officers thoroughly trustworthy of sound physique and of a character fitted to command respect and enforce discipline among their subordinates and to attain this a higher scale of pay would probably be necessary. The charges would be redistributed without reference to district boundaries; but some increase in number might also be necessary. The chief of the department would also need one or two officers as his immediate assistants or deputies.

241. The existing local establishments are, in our opinion, generally insufficient, and the salaries of Superintendents and Assistant Superintendents, too low. Moreover, such measures as the abolition of wholesale sales, the introduction of bagging and the enforcement of more accurate weighment, will, if carried out, necessitate an increase in the strength of establishments, at least in the lower grades. The arrangement of stations in the order of importance requires revision; for instance, one of the stations in Nellore seem over-officered for present requirements. At such stations the manufacture has probably fallen off since Mr. Pelly's revision. Some savings might be gained by such re-adjustments and by the closing of small stations.

242. The Board of Revenue in July 1875 submitted to the Government of Madras a scheme for the improvement of the service both as to strength and pay, the details of which are as follows:—

Superintendents.			
Madras Kotars,	1	Superintendent on Rupees	225 = 225
Class I	6	"	175 = 1,050
" II	11	"	150 = 1,650
" III	9	"	125 = 1,125
" IV	17	"	100 = 1,700
" V	17	"	80 = 1,360
" VI	8	"	60 = 480
Malabar and Canara only {	VII	3	50 = 150
" VIII	6	"	40 = 240
Add proposed allowance to Tahsildar of Cochin for superintending sales			25
Total per mensem...			8,005

Assistant Superintendents.			
Class I	16	Assistants on Rupees	50 = 800
" II	26	"	40 = 1,040
" III	56	"	30 = 1,680
" IV	34	"	20 = 680
Total per mensem...			4,200

The number of Superintendents and Assistants proposed for each district and the increase of cost resulting from the changes proposed are shewn in the following table:—

Districts.	Assistants.				Superintendents.			
	Present.		Proposed.		Present.		Proposed.	
	Number.	Pay.	Number.	Pay.	Number.	Pay.	Number.	Pay.
Ganjam	8	Rs. 145	13	Rs. 510	4	Rs. 355	4	600
Vinayakam	5	100	8	270	5	355	5	450
Godavari	3	90	5	180	2	150	2	300
Kistna	8	160	11	400	4	350	4	575
Nellore	9	170	11	320	10	650	10	965
Chingleput	28	550	32	1,010	10	740	11	1,395
South Arcot	9	180	9	240	3	270	3	455
Tanjore	14	265	19	600	8	550	8	905
Madura	5	100	7	190	5	250	5	505
Tinnevely	8	170	11	330	5	320	6	710
South Canara	4	65	5	120	12	450	12	670
Malabar	1	15	1	20	6	250	6	420
Tahsildar of Cochin	...	...	...	...	...	...	...	35
Total	102	2,010	132	...	...	4,690	78	8,005

243. The total increase of annual expenditure involved in the Board's scheme would be Rupees 1,46,460 — 80,400 = Rupees 66,060, and some such change is necessary under any circumstances and would, we are convinced, repay its cost manifold in the enhanced revenue which stricter supervision would produce. But, should an excise system be introduced, the details would have to be reconsidered.

244. A perfect preventive system would be one which secured two objects:—(1) that no illicitly manufactured salt passed out of the custody of Government officers till it had paid the full duty leviable upon it;—and (2) that no illicit salt was manufactured or collected.

245. Illicitly manufactured salt may be passed out either by theft or fraud. What checks on the fraudulent method exist and how far they are enforced, we have already seen. Theft may take place at any time before sale, and we proceed to consider what precautions are taken at each stage of manufacture and storage. As soon as the season of manufacture begins, a special force of temporary police is assigned to each work for the express purpose of guarding the pans day and night. The constables are either posted at intervals round the external boundary of the pans or in raised watch-towers, which are sometimes placed in the midst of the pans, and a constant watch is supposed to be kept. The sentry posted on the platform watch-tower may also in the daytime aid in overlooking the tract of manufacture, and perhaps at some stations the permanent police may more directly aid in watching the pans. The danger of theft is naturally much greater by night. Hence certain regulations have been laid down to exclude, if possible, all persons from the pans after sunset. Under these rules*, half an hour before sunset a drum or gong is beaten as a warning, and at sunset all manufacturers are bound to leave the pans, by a prescribed route. After sunset and till sunrise no one is permitted to enter the pans without a special order of the Collector or Deputy Collector. During the day the manufacturers may enter the pans at any time, but they can only leave at noon and at sunset, except in case of illness. Wherever possible, a broad moat 7 feet deep is to be carried round the pans, serving at once as a supply channel, as a means of carriage and as a protection against theft; and in some works this excellent arrangement has been adopted. If a moat is not possible, a hedge is enjoined. But we saw pans without any artificial boundary or fence to mark or protect the pans.

246. The Statement in Appendix C. No. 41, shews the strength of both permanent and temporary police assigned to each division in the year 1874—75. The different grades at each station are not separately shewn, but there are only two inspectors and one chief constable (in Chingleput) on the permanent strength, and one Inspector specially sanctioned in Vizagapatnam. The general proportion of head constables is one to every six or seven constables in the permanent guard, and one to ten in the temporary guard. Except in Chingleput, the salt police of each division is subordinate to the Inspector of the taluk, and the highest officer of police actually stationed at the works is a head constable, on a salary varying from Rupees 10 to Rupees 25.

247. Without accurate local knowledge it is impossible to analyse this Statement, which at first sight presents remarkable anomalies. So much depends on the circumstances or otherwise of the works that no safe conclusion could be drawn from a mere comparison of the strength of the temporary guard with the area to be watched. It should be remembered also that in the northern Chingleput works and at Vaddemman the permanent guard watches the pans, as salt is not stored on the works, and probably this same is the case at Covelong and

* Standing Order, No. 206, Section 1. (Standing Order, No. 21.)
* Standing Order, No. 205.

Cheyur where the permanent force seems disproportionately large. Still, after all allowance made, the discrepancies are very marked. For instance, if a temporary force of 56 men is needed at Ganjam to protect a pan area of 383 acres, how can 4 men be enough for nearly the same area at Tambikakottai, or 13 men suffice at Padarti to guard an area of double that extent? In point of fact, Ganjam and perhaps Chingleput are the only districts where anything approaching an efficient cordon of posts is maintained to watch the pans. In the southern districts especially, the guards on the pans are almost ludicrously insufficient.

248. Moreover, the statement which we have obtained from the Inspector-General of Police shewing the strength by divisions, is in excess of that which he supplied to us shewing the strength by districts. The former shews the sanctioned strength, the other that actually maintained. In cases of emergency, e. g., a fair or festival involving a large concourse of people, a District Superintendent does not scruple to draw upon the salt guards and so weaken a force already too feeble for its duties.

249. The protection of salt in the pans depends almost entirely upon the efficiency and trustworthiness of the guard, for, even where an estimate of salt lying on the ridges is daily made, it is necessarily too rough to be any barrier against thefts except on an extensive scale. As an instance of the dangers which may arise from dishonest collusion between the police and the salt officials, we wish here to give a brief account of a remarkable fraud upon the revenue which took place at Nowpada in 1872. The offence lay on the border line between theft and fraud, or might even be classed as rather a case of collecting illicit salt than of removing licit salt out of Government custody. Still, perhaps the present is the best place to notice the facts.

250. The amount laid down as the dittam or quantum to be manufactured at Nowpada in the season 1872, was 2½ lakhs of maunds. Manufacture began on the 1st February and, owing to a very favourable season, by the 11th April the estimate of salt heaped on the drying-ground, (including what had been stored in the interval), shewed that the estimate had been realised. That very day the Deputy Collector issued an order that the manufacture should cease and no more salt be received. The ryots looked at this as a great hardship. The pans were still in full working order, and the manufacturers could have gone on making salt till the beginning of the rains. The Assistant Superintendents were ordered to see to the salt in the pans being destroyed, but they neglected to do so, indeed one of them, Narsingh Bhan by name, was to have been a chief concoctor of the remarkable scheme of fraud which followed. This man was practically the head officer at the work, the Superintendent being old and feeble; he was moreover a man of local influence, being connected with the farmers of the village, which is held in zemindari tenure. In concert with the police, he arranged to bring troops of kavadi-men* each night to the pans and carry off the salt which had formed. Each carrier paid a price estimated by the Principal Assistant Collector, Mr. Grahame, at one-third of the Government monopoly price. When the first crop of salt was exhausted the pans were again filled, and this was repeated a second time. Emboldened by success, the confederates for a while began to carry off the salt even by day and were only stopped by the coming of the monsoon about the 20th June. On the 2nd July one of the Gumsurriya Paiks entertained as extra police, on his way back to his home, informed the District Superintendent of what had been going on. That officer proceeded to Nowpada, where he was met by Mr. Grahame, Principal Assistant of Chicacole, and, with the aid of informers, 1,171 maunds of salt were discovered in caches in the yards and fields of the villages near the works. What proportion this amount bore to the quantity actually made and removed in this fraudulent way, it is impossible to say.

* The kavadi is the "barguy" of northern India, the bamboo with baskets slung at either end and carried on the shoulder.

Mr. Grahame gives several estimates of the latter, based on different modes of calculation, the lowest being 40,000, the highest 3 lakhs of maunds. The Collector writes, "Whether the frauds extended to one lakh or six lakhs of Rupees' worth of salt, it is now impossible to say. * * * * It is not impossible, however, that "between one and two lakhs of maunds were misappropriated." There can be no doubt that there was a bold and successful conspiracy, and that a very appreciable amount of revenue was lost. Mr. Grahame summoned two of the nearest Sub-Magistrates to help him, and tried the principal offenders himself. Thirty-five offenders were convicted of theft and sentenced to terms of imprisonment varying from 2 years downward, and some to fines in addition, but all the sentences were reversed by the Sessions Judge on appeal, apparently on the ground that the facts even if established, did not constitute the offence of theft.

251. Where there are distinct drying-grounds, they are generally under the protection of the platform guards, being close to the platform or even forming a portion of it. Mr. Bayley mentions as a form of smuggling the sale of salt just brought in from the pans before it is carried into store. Such theft must be with the connivance of salt officials and manufacturers, who must share the gains. To guard against this, the Board has prohibited sales being carried on in the neighbourhood of storage or drying-grounds. But the rule is not, and from the position of drying-grounds cannot, always be strictly observed. And where the ryots' heaps lie on the storage platform, there is nothing but the vigilance of the sentry at the gate to prevent a manufacturer removing salt even without the collusion of the salt officials. When sales are going on at the same platform there are peculiar facilities for this kind of theft, as such salt could hardly be distinguished from that in process of being removed by coolies under a pass, the sentry having no means of verifying the quantity covered by the pass. An order of Government* declares that "it must be understood that the salt manufacturers are expected to aid in the protection of salt previous to its delivery into store." But, as pointed out by Mr. Bayley, (para. 170 of his memorandum), the manufacturers are themselves the persons chiefly concerned in thefts from the pans. Indeed it is obvious that if a man can steal the salt of his own manufacture and sell it illicitly, he must make much more by the transaction than by legitimate sale to Government even at the highest rate of remuneration given.

252. The arrangements in Chingleput and Tanjore for the protection of salt in transit to the stores must be specially noticed. Most of the salt of Chingleput and so much of the salt of Vedaranyam as is stored at Negapatam has to be carried a considerable distance in boats. At the Chingleput pans, whence the salt is carried to the Madras store-yard or the Home's Gardens depôt, the arrangements are as follow. Boats are sent by the salt officials to the pans and distributed to the ryots according to the amount of salt they have made. The ryot then loads his salt in the boat and an estimate of the quantity is made, generally according to the tonnage of the boat. When the boat is loaded, patches of mud are placed at intervals along the salt and stamped in the presence of the Superintendent or Assistant Superintendent, the salt is then covered with a tarpaulin tied down to rings on the sides of the boat. A boat-note is made out for each boat, shewing the name and rank of the manufacturer, the number of the boat, the name of the boatman, the estimated quantity and the name of the constable accompanying the boat. The boat-note for the day are sent by a peon to the Superintendent at the Madras or Home Gardens storage platform. When the boats are ready for despatch they are made over to the head constable who places constables in charge, generally at the rate of one constable to six boats. The constable travels in the last boat, and, if a boat is grounded, has to wait to see it off; meanwhile the other boats get beyond his supervision. Each constable has a list of the boats in his charge and makes them over on arrival to the head constable at the platform, who examines the stamps. From Enno

* See Board's Standing Order No. 202.

to the Madras store yard is 12 miles; from Vadasemmanjeri to Home's Gardens depôt 13 miles, and from Covelong to the same 17 miles. No salt police stations are established on the lines of canal. The Superintendent at the platform checks the numbers of the boats and the quantity of salt according to the boat-notes; he also examines the seals. The salt is then unloaded, and, after being allowed to dry for about three days, is weighed into store. As each boat-load is weighed, the weighing officer writes on the back of the boat-note the actual out-turn by weight. For the season of 1875, the entries were made daily up to the 10th July, when, for some unexplained reason, they stopped. The imperfect record shewed the following figures:—

Estimated quantity shipped.....	938,310 maunds.
Actual out-turn by weightment...	838,925 „
Deficit...	99,385 „ or 10.58 per cent.

The book for the season 1876 was examined on the 8th June and shewed entries on three dates. For those three days the deficit on the estimated quantity shipped was as follows:—

Estimated quantity shipped	31,880 maunds.
Actual out-turn by weightment ...	26,607 „
Deficit.....	5,273 „ or 16.5 per cent.

It is true that the quantity shipped is only roughly estimated and not carefully weighed, and there is no doubt wastage on the way. But it seems to us strange that no enquiry should be made into these very remarkable discrepancies and we think that the salt is exposed to very serious danger of theft while passing from the pans to the storage platforms in Chingleput, the arrangements for its safety being eminently unsatisfactory.

253. Much the same may be said of the transit arrangements from Vedaranyam to Negapatam. The distance traversed is there greater (about 32 miles) and police posts are established along the canal at intervals of about 5 miles. But in 1875-6 on 204,165 maunds of manufactured salt shipped at Vedaranyam the net deficiency amounted to 18,199 maunds or close on 9 per cent. In individual boat-loads there were many cases of deficiencies of 10, 15, 20, and 25 per cent. and cases of deficiency even exceeding per cent. were not wanting. One boat-note, dated 4th April 1876, shewed that an estimated 344 maunds despatched only 134 maunds had been weighed in. These discrepancies seem to have called forth no enquiry, although the injustice to the manufacturer, who is paid on the out-turn, and the danger to the revenue are equally manifest.

254. We would recommend that Vedaranyam salt should be stored and sold at Vedaranyam. In Chingleput, we think that, unless arrangements can be made for trustworthy weighment of salt when loaded in the boats and for guarding it while in transit along the canal, the salt now stored at Madras and Home's Gardens should be stored locally.

255. When once weighed into store and stored in heaps, the salt is in charge of the permanent police guard attached to each platform. Statement No. 11 in Appendix C, shews the strength of these guards as they stood in 1874-5. We have already noticed the construction of the platforms, their moats, drawbridges, hedges and watch-towers. The rules* require that no salt should be sold after 5 p. m., and that the platform should be cleared at sunset. Between sunset and sunrise not even the "subordinate servants of the salt establishment" are to be admitted,† save under exceptional circumstances, e. g., a heavy burst of rain, and

* Standing Order, No. 200, § 17.

† Standing Order, No. 211.

such exceptional cases should be specially reported to the Collector. This prohibition extends to Superintendents. A rule* also prohibits traders encamping within 100 yards of any platform, heap or pan. In the strength of permanent police there is also extreme diversity, depending to a great extent on the number of platforms in each division. In many cases these guards are too weak, especially in Madura. At Negapatam we had proof that they were wanting in vigilance. It is, however, probable that the platforms are better guarded than the pans and that serious theft from the former is not of frequent occurrence. Much remains still to be done to improve the fences and moats of the platforms; if these were everywhere in good order, the duties of the police would be more effectively performed.

256. Special measures are from time to time taken against the collection

Measures against collection or manufacture of illicit salt.

Vizagapatam—

1 Inspector.
3 Head Constables.
22 Constables.

26 men in all.

Madura—

1 Head Constable.
4 Constables.

5 men in all.

or manufacture of illicit salt. In Vizagapatam a special police force, of the strength shown in the margin, is sanctioned for preventive duties, and in Madura in 1874-75 a force (see margin) was maintained for a portion of the year to watch salt swamps or tracts where spontaneous salt is likely to form. In Nellore a force of 1 superintendent and 12 peons is attached to the Revenue Department, to watch the excavations made by the digger of shells for lime on the borders of the Pulicat lake in which spontaneous salt forms yearly. It appears also that the temporary police force sanctioned for Vedaranyam is rather to watch the great spontaneous salt swamp than to guard the pans of manufactured salt. In a scheme for strengthening the salt guards of the Ganjam district were included two mounted patrolling officers and two boats, the former to patrol the line of sea-coast, the latter the coasts of Chilka Lake and the Rumbal Canal, and watch for illicit manufacture. The proposal, though approved in the Revenue Department of the Madras Government, does not seem to have been as yet brought into effect, probably for financial reasons. The preventive force is not absolutely fixed, as small bodies of police are occasionally deputed to watch particular places when there is special danger; but the total force at any one time engaged in this duty is probably small. It is understood to be a duty of the general police force, as also of the village officials, to look out for and report any case of illicit manufacture or collection of salt. We are, however, informed by the Inspector General of Police that the beats of the ordinary police seldom pass the swamps and waste places where such manufacture and collection are most likely to take place.

257. We have already adverted to the Nowpada frauds, and in illustration

Dangers to the revenue from illicit collection and manufacture.

of the dangers to the revenue from insufficient prevention of illicit manufacture, we will notice the cases of illicit manufacture which were discovered in the Ganjam district in the same year, 1872. At Palur, a zamindari situated on the Bengal frontier at the southern corner of the Chilka, large works were formed; and abundant tracts of illicit manufacture were found on the Bengal side of the frontier between Chilka and the sea, and on its western shores in Madras territory. The works at Palur were scattered over 70 acres; 50 persons were arrested in the act of manufacture; and the quantity of salt made in these works was variously estimated at 1,000 maunds in the season of three or four months, to 200 maunds per diem. Deputy Collector ascertained that the inhabitants of the neighbourhood used no salt, and the produce of these works was believed to be supplied to the markets of Cuttack, Berhampore, Kalikote, Alagada, Gumsur, Chikati, or within a circuit of some 40 or 50 miles. It was also smuggled across the Bengal frontier. The Superintendent of Palur believed, from what he had gathered, that the manufacture of illicit salt on the shores of Chilka had been in force since the famine of 1865-6. The Collector's report on the case shews very clearly the difficulty, owing to the weakness of the salt establishments, and the inadequacy of the present law, of preventing illicit ma-

* Standing Order, No. 209, § 18.

nufacture and of bringing the offenders to punishment when detected; and extracts from it will be found in Appendix C, No. 12. At the time that the Palur manufacture was brought to light, information was obtained, that salt was being made at three villages within a short distance of the Ichapur salt works. About 200 pans were found scattered over an area of a square mile and in sight of a main road, and the produce was estimated at 90 maunds per mensem. About 52 maunds of salt were seized. These cases indicate that up to a recent date illicit manufacture existed in the Ganjam district, and it admittedly still exists in the adjacent Pooree district on the borders of the Chilka lake. We were informed, when in Ganjam, that there are

Pudi, Kalingapatam, Nizama-
bad, Jafarabad, Srikurmam,
shores of the Chilka lake.

swamps where natural salt forms at the places noted in the margin, besides in the vicinity of Nowpada and Womera-villi. No special guards have been sanctioned for these swamps; but, as in most parts of this Presidency, the duty

of prevention is left to the ordinary police and the village officials. The Collector of Ganjam, as has been noted above, has applied for a special force to patrol the coast, but the matter is still under discussion.

258. We have no information shewing that in other districts on the East Coast marine salt is illicitly made by solar evaporation in the ordinary way, but it is possible that such manufacture may take place. The replies of Collectors to our enquiries as to the manufacture of earth-salt and the illicit use of natural salt will be found condensed in Section II of the first part of Appendix A. We shall here

Earth-salt and swamp salt in other districts.

summarise what is known of the prevalence of illicit consumption; reserving for fuller treatment subsequently the case of recognized earth-salt manufacture in the districts of Bellary, Cuddapah and Kurnool. The Collector of Ganjam says that natural salt when it forms in his district is collected on account of Government or destroyed, but his observation of course refers only to cases in which the formation has become known. The existence in

Ganjam.

Vizagapatam.

the adjoining district of Vizagapatam of considerable deposits of salt-earth, and of illicit manufacture of earth-salt therefrom, has long been known and recognized as causing great loss of revenue. The salt swamps are described at pp. 8 and 9, of Appendix A. They are nine in number, and according to the dimensions given are about 50 square miles in extent. Four of them are in the immediate vicinity of salt stations. The salt-earth which they produce is really an impure salt; and one that we obtained from the swamp at Karasa near the town of Vizagapatam was found on analysis to contain as much as 69 per cent. of chlorides, chiefly of course of sodium. The salt produced from the salt-earth by lixiviation is extensively consumed in the coast tracts of the district. In 1865, the Collector, Mr. Michael, writing to the Board reported that "certain of the better classes will not partake of it, but it is freely used by the ryots, the bulk of the people;" the Deputy Collector, who was then specially deputed by the Collector to take measures for the suppression of the traffic, reported that it was more than satisfactorily proved "that the use of the earth-salt has become most common in the district, and that it is used to a far greater extent than the Government salt."

It is openly, in the day-time, by hundreds of men, collected at the spot, gathered from the swamps and other favorable localities, and carried away in a "number of kavadis undefied and unopposed." The Deputy Collector here referred to had made numerous seizures with the result of checking a considerable decrease in the sales of monopoly salt which had at the time attracted attention. The Board recommended stringent measures for the repression of the manufacture and arrests and prosecutions continued to be made until 1868 when a doubt arose whether the use of salt-earth was a punishable offence; a view which was for the time adopted by the Board, (Proceedings, 24th March 1868, No. 2,106), though they held that the possession of a large quantity of salt-earth would in itself be strong evidence of a clandestine transaction with respect to making salt, an offence punishable under Section 18, Regulation I, of 1805. Their opinion on the last-mentioned point was confirmed by the High Court in their ruling of 20th July 1869. The sales of salt in the district continued to fall, chiefly owing to the prevalence of earth-salt consumption.

but also partly to the failure of supplies; and in 1871-2, (which, however, was a year of great distress), they were only 1,48,849 maunds. In October 1871, the Board of Revenue, noticing this great decrease, called upon the Collector to report what special measures were taken to suppress earth-salt manufacture, and the Salt Deputy Collector was in consequence deputed to organize searches after illicit salt, and vigorous prosecution of offenders, and monthly reports of what was being done were submitted to the Board. In the first three months of 1872, some 10,000 maunds of earth-salt were seized and 2,000 persons punished. Seizures continued to be frequently made, and in August 1873, Government sanctioned the addition to the district police force of a special body consisting of an Inspector and 25 constables for the detection and prevention of offences against the salt-laws. These men appear to be now employed in guarding the salt-swamps above mentioned, a task for which they are quite insufficient; and notwithstanding all these measures, the use of illicit salt is far from being suppressed, no less than 9,549 maunds having been seized in 1875-6. The sales of monopoly salt have, however, much improved, partly owing to these measures and partly to the re-opening of the Konada station. In 1872-3 and the two succeeding years, the sales were respectively 195,408; 2,33,352; and 2,79,695 Indian maunds.

259. The Collector of Godavery states that earth-salt is made in a few villages on the sea-board in the Narsapur, Bhimavarat, and Arnalapur taluks; and when in the district we were informed that some 200 persons had recently been prosecuted for removing natural salt from some swamps near Mogaltur. This was in consequence of the appointment, under the Board's sanction, of a small body of 4 men to look after the swamps; and their employment has again been sanctioned in the current year.

The Collector of Kistna has given us no information upon the subject, but we believe that natural salt forms to a considerable amount in swamps near the sea on the northern border of the district. In Nellore, it is said, earth-salt is not made, but natural salt is occasionally smuggled. It forms chiefly the shores and among the islands in the Pulicat lake, the northern portion of which is annually banded off so as to prevent the formation of natural deposits of salt. In almost all the other districts earth-salt is made to some extent, but the manufacture does not seem to seriously affect the revenue except in South Arcot, Trichinopoly, Madura, and in the west coast districts.

In South Arcot and Madura the Collectors state that the manufacture is extensively prevalent. In 1871, the Inspector-General of Police reported that the manufacture was increasing in South Arcot, 42 cases having been reported in 1867; 45 in 1868; 48 in 1869; and 98 in 1870. Sixteen cases were reported in Madura in 1870; and the same year "the increased manufacture in Trichinopoly consequent on the enhanced price of Government salt was brought to the notice of the police by a man who deals largely in Government salt, and who declared that the sales were falling off owing to the quantity of earth-salt that was brought to Trichinopoly." In consequence of this information, the police set to work, and 101 cases of illicit manufacture were put before the different Magistrates. Confessions were obtained in 99 of these cases, and 395 persons were punished with fines amounting Rs. 1,623. Salt valued at 260 Rs. was seized. The authorities of the railway company had at the same time brought the decrease in their salt traffic consequent on the earth-salt manufacture to notice. (Cf. App. A, p. xiv); and again in 1875 they called attention to the matter. The figures as to the railway traffic given in the Appendix show grounds for believing that the salt traffic by rail from Negapatam is seriously affected by the earth-salt manufacture. Prosecutions in the Trichinopoly district are reported to have risen from 57 in 1871 to 155 in 1875. In the Udayarpalayam taluk (bordering on South Arcot) it is stated that earth-salt is made in 166 villages, and that three-fourths of the population (237,893) use sea-salt. Earth-salt is also extensively produced in the north-east part of the Madurai taluk, and in the southern villages of the Trichinopoly taluk bordering on

Pudukottai territory, whence also, the Collector reports, it is extensively smuggled into British territory.

260. The manufacture of earth-salt in the Pudukottai state is a monopoly. From a statement furnished by the Political Agent it appears that the average quantity manufactured on account of the State is 15,104 kalams, equivalent to 16,189 Indian maunds, and the average sum realized 13 as. 9 p. per maund. The gross receipts average Rs. 10,054 and the charges 7,027, giving a net revenue of Rs. 3,027. The salt is reported to be wholesome, containing 97.6 per cent. of chloride of sodium; but the well-to-do classes in Pudukottai, which contains a population of 316,695 persons, are said to eat sea-salt imported from Arasanagiri and Kattamavadi in Tanjore. Mr. Pennington, late Political Agent, states that even the poorer classes are at times obliged to buy sea salt, earth-salt not being obtainable. He doubted the existence of exportation to British districts which had often been complained of. We have seen, however, that the present Collector of Trichinopoly says that it is extensively smuggled into that district, and the Collector of Madura also reports that it is imported clandestinely into the Tiruppattur division of his district, which borders on Pudukottai. The Deputy Collector of Tanjore states that the import of the Pudukottai salt is strictly prohibited, and is supposed to be prevented by the police. There seems to us to be little doubt that the quantity brought to account of the Pudukottai State is much less than is manufactured, and that much is illicitly made and exported for consumption in British districts. The existence of this manufacture is a considerable danger to the British salt revenue, and it would seem advisable to negotiate with the Raja for its suppression on payment of compensation calculated on his net revenue. The suppression of earth-salt in this region, including the Trichinopoly district, and parts of South Arcot and Madura, appears to require some special preventive measures. It will never be effected by the intermittent action of the regular police.

261. In the south of the Tanjore district there exists a large swamp, some 30 miles long by 4 or 5 wide, which is at certain seasons covered by the sea, and may be described as an immense natural salt bed. Spontaneous salt forms there in large quantities. To guard this swamp, a force of 16 policemen is allowed, and is stationed during the season at intervals along the northern margin of the swamp. This force is altogether sufficient for the prevention of smuggling, and it is probable that a large part of the population of the neighbouring taluks consume chiefly natural salt produced in the swamp and clandestinely gathered.

262. We have already, in our report on the West Coast salt supply, pointed out the great loss of revenue which results from the private manufacture of salt in the Malabar and Canara districts, and have recommended its suppression. An interesting account by the Collector of Malabar of the manufacture in his district will be found in Appendix A. The salt is there and in South Canara made by lixiviating salt-earth with backwater brine. It seems to be impossible to estimate even approximately the quantity actually produced, but there is no doubt that it is very great. The extent of land under salt cultivation in the Ponani taluk alone is estimated to be capable of producing 1,17,000 Indian maunds, and it will be seen from the chapter on distribution that the statistics of the railway traffic shew strong grounds for believing that this salt is carried in considerable quantities into other districts.

263. Besides the earth-salt manufactured as such, edible salt is produced in the manufacture of saltpetre which exists in several districts, and is now entirely free from restraint or regulation. Attention was called to the subject in 1873 by the police authorities. It was then reported that in 16 villages of the Trichinopoly and Salem districts, 225 persons were engaged in the manufacture of saltpetre; and in the process, edible salt to the extent of 30 per cent. was produced; that salt was valued at 1 anna a seer; that the manufacturing coolies who were allowed to carry it away paid a fixed sum yearly on account of it to the owner of

the saltpetre work; and that it was generally disposed of by barter. The Board of Revenue thereupon suggested that Act XXXI of 1861, which provides for the regulation of saltpetre manufacture, should be extended to Madras; but before passing final orders Government called for further reports from the Collectors of Coimbatore, Salem, Trichinopoly and Madura, which districts were the chief seats of the manufacture.

264. These reports showed that the quantity of saltpetre produced was small, (12,000 maunds in Salem and 16,000 maunds in Madura—not estimated elsewhere), and it was stated that the salt produced was of an inferior kind, was consumed only by the poorest classes, and probably could not bear the full duty. The difficulty of checking the production without a special establishment was all adverted to, but it was admitted that the existence of unregulated saltpetre manufacture afforded facilities for the production of illicit earth-salt—as the two commodities were often manufactured together. The Board observed that, so long as the quantity of saltpetre manufactured continued as trifling as it then was, no notice need be taken of it, but it was to be hoped the manufacture would revive and increase, and they repeated their recommendation for the extension of Act XXXI of 1861. The Government, however, decidedly negatived this suggestion.

265. We requested Collectors to give us information as to the extent of the saltpetre manufacture, and the quantity of edible salt produced, and the substance of their replies is given in the following table:—

Districts.	Number of works.	Quantity of saltpetre manufactured.	Quantity of common salt produced.
		L. M. Seers	L. M. Seers
Madura*	511	2,840	204
Salem	201	1,204	...
Coimbatore	329	5,295	539
Tinnevely	17	113	22
Tanjore	39	460	...
North Arcot	1	22	29
South Arcot	13	4	39
Cuddapah	8	398	...
Bellary	13	498	1,086
Kurnool	9	270	204
Trichinopoly	183	2,794	898
Total	1,142	13,719	2,785

266. The imports and exports of saltpetre by sea during the last five years average as follows:—

	Quantity.	Value.
	L. Mds.	Rs.
Imports.....	1,372	12,060
Exports.....	7,268	51,770

The imports were entirely from British Indian ports, and the exports almost entirely to foreign ports out of India. So far as the figures go, the manufacture seems to be insignificant.

267. The Collectors do not distinguish between the production of refined and crude saltpetre, but considering that there are no restrictions whatever on manufacture, that the purer the saltpetre is the higher will be the price obtained by the manufacturer, and that it is as easy to produce refined as crude saltpetre, we may reasonably infer that the above figures show the amount of refined saltpetre produced. It is usually estimated that 200 maunds of crude saltpetre are required to produce 100 maunds refined, and that for every 100 maunds of crude saltpetre made 30 maunds of salt fit for human consumption are produced on the average. Assuming this calculation for the 13,720 maunds of saltpetre said to be produced in the N. Presidency, i. e., $\frac{13720 \times 2 \times 30}{100}$ we find that 8,232 maunds of salt represent what probably passed into consumption without payment of duty. This quantity at Rupees 1-13-0 per maund represents a loss to the revenue of Rupees 14,921.

* In the statement from Madura estimates for three taluks for different quantities are given at 1, 1 and 1 saltpetre entered, but for three other taluks no estimates can be given.

268. When saltpetre manufacture is unregulated, it is fraught with great danger to the revenue, for works ostensibly for making saltpetre are often really maintained for making illicit salt. The table above given seems to show this. In the Kurnool district the out-turn of salt nearly equals that of saltpetre, and in the Bellary district the salt produced is more than double the quantity of saltpetre, each work on the average turning out 83 maunds of salt against 38 maunds of saltpetre. Again, the petty out-turn of the works points to the conclusion that saltpetre is not the object in view; the lowest average out-turn is in South Arcot, viz., about 14 seers, and the highest is in Bellary, viz., 38 maunds, while the average of each work on the total out-turn is 11 maunds. We think, therefore, that it is very desirable that something should be done to bring the manufacture of saltpetre under supervision. We would recommend that the Act of 1861 be extended to Madras, as even the licensing of saltpetre works would tend to the establishment of some control; though we do not think that, in the absence of a special agency for working it, the Act is likely to be entirely successful. The information we have obtained as to the extent of the manufacture does not warrant us in recommending the organization of such an agency everywhere, though the special establishment which, as will be seen below, we propose for the Ceded districts, might there be entrusted with the working of the Act relating to saltpetre. We would introduce the Act, the enforcement of its provisions being intrusted for the present to the ordinary police and revenue authorities, and leaving it to the head of the salt department to prosecute further enquiries and propose such measures as may seem to him necessary hereafter.

269. At present the police employed in salt duties, whether the permanent guard on the platforms or the temporary force maintained to watch the pans during manufacture, or the special bodies posted to prevent illicit manufacture in particular cases, are placed completely beyond the control of the salt officials, except in so far as the Collector is also Magistrate of the District. This system has certain advantages, especially the check which one department exercises on the other. But on the other hand it has been seen in the Nowpada fraud case that the two are ready to combine where money enough is to be made by collusion, and at other times a wholesome mutual watchfulness is apt to degenerate into obstructive jealousy. The police, forming part of the general district force, are liable to continual changes, as the sites of salt works are not generally attractive spots to live in, they look forward to the change and fall into a lax and careless way of performing their duties. We have also already noticed that they are liable to be summoned away on emergencies to do the ordinary work of police. On the other hand complete severance from all functions of police is likely to give rise to the feeling on the part of the salt subordinate staff that it is no business of theirs to look out for the revenue but only to see to the manufacture and storage of a certain quantity of salt. The following paragraphs are taken from a letter written by Colonel Hearn, Inspector General of Police, to the Board, in January 1872:—

"In my letter, embodied in the Proceedings of the Board of Revenue, No. 477, dated 10th January 1862, I wrote as follows:—It appears to me however that nothing short of a special and trustworthy supervision will remedy existing evils. The superior officers of constabulary are too much occupied in police duties to be able to give more than casual attention to the men employed in the Salt Department. The mere substitution of police constables for revenue peons cannot be expected to secure an efficient preventive service. The duties of the police are already sufficiently multifarious, and I am strongly of opinion that as a general principle, a special preventive force such as that employed in the Salt Department, should be entirely distinct from the constabulary. This opinion was endorsed by the Board but subsequently over-ruled."

"I do not now advocate an immediate change of system because a re-organisation would be expensive and difficult, but the evils indicated in the foregoing quotation have certainly displayed themselves in practice. The supervision of the higher ranks is casual and therefore imperfect. Further, the expenses of the Salt Police are charged in the police estimate. No matter how much revenue may be saved, the total actual police charges alone, and the higher this sum total is, the more difficult is it for the

Police Department to get the money. Consequently there must ever be a tendency to keep down the revenue preventive services to the lowest possible limits."

The Board thereupon recorded the following order:—

"The Board accept the suggestion of the Inspector-General that good results would follow the supervision and direction by the Salt Deputy Collectors of the preventive operations of that portion of the constabulary which is now specially told off for preventive service and which is at present without the advantage of efficient supervision. It seems desirable that special orders should be given to the police in charge of salt-works to consider themselves under the general orders and direction of Salt Deputy Collectors."

Colonel Hearn, however, immediately after going on furlough, his locum tenens thought that his letter was only meant to refer to what might be, if the salt preventive force were organised as a separate service, and the correspondence ended with a general inculcation of "more cordial co-operation between the two departments."

270. We are of opinion that something more than this is required and that, if a separate Collector of Salt Revenue be appointed, the whole protective and preventive arrangements, for the guarding of licit salt in all its stages, and for the prevention of illicit manufacture or collection in any of the forms above described, should be placed in the hands of the chief of the department and carried out by a separately organised branch of the departmental service, unconnected with the general police force. Of course the constitution of such a branch of the department should not relieve the general police of the duty of checking so far as may be in their power, illicit practices with regard to salt, and co-operating with the special service; and, in the event of the salt laws being recast, a provision distinctly affirming this principle should be introduced. We are also of opinion that in any case the present arrangements require revision in respect of the sufficiency of the protective force, especially in the southern districts.

271. We now pass to the discussion of the earth-salt manufacture in the districts of Cuddapah, Bellary and Kurnool, and of the measures which have recently been taken in regard to it. This manufacture has prevailed and has been more or less permitted ever since the country became a British possession. It is a formidable source of loss of revenue, and the recent measures were intended to secure that if salt made should be fully taxed. We propose to examine how far they have been successful.

272. The injury to the salt revenue involved in this manufacture has been recognised from very early times. In the excise law prepared by the Board of Revenue in 1812 it was proposed to bring it under excise, and in 1813 Colonel (afterwards Sir Thomas) Munro called attention to it as operating against the salt monopoly. In 1812 the manufacture was prohibited in Cuddapah, and a gradual abolition ordered in Bellary, in consequence apparently of a letter from the Collector of Nellore complaining of the importation of the article into his district. The manufacture, however, was not suppressed. In 1828, on the enhancement of the monopoly price of sea-salt, the Board directed the Collector of Bellary to prohibit the manufacture wherever this could be done without hardship to the people; but the Collector, apparently considering that this was nowhere the case, made no reply and took no steps to carry the order into effect. The Collector of Cuddapah at the same time reported that no great quantity was made in his district, and that the salt was very useful for cattle. In 1829 complaints were again made by the Collector of Nellore, but his statements were considered to be exaggerated and nothing was done, though the Collector of Cuddapah had proposed to restrict the manufacture to certain localities. The question appears to have come up in 1843, when Government decided not to enforce the monopoly in Bellary; a decision which was approved by the Court of Directors, who, however, ordered that steps should be taken to put the manufacture under a more definite system of regulation, and to levy a moderate tax on the produce in lieu of the mo-

na then in force in Bellary. On this certain correspondence followed, as to the expediency of re-classifying the 'modas' or factories, so as to carry out the orders of the Court, and as to the feasibility of licensing the manufacture or farming out the revenue. The last two plans having been declared impracticable, the Board finally recommended that the existing moturpha should continue in Bellary, and should be extended to Cuddapah; but the Government, with whom the Court of Directors concurred, approved the former suggestion and rejected the latter, and accordingly matters remained as they were. In 1849 and in 1851, the Government again ruled that nothing should be done to alter the existing state of things.

273. Mr. Plowden noticed the subject of earth-salt prominently in his report, and recommended that the manufacture should be excised at full duty, or that, if it could not be so excised or suppressed, the moturpha levied should be discontinued. The matter seems to have been lost sight of when action on other parts of his report was postponed. In 1860, Mr. Clarke called attention to the subject in connection with import of earth-salt into Nellore; and the Government, remarking that the abolition of the moturpha rendered careful consideration of the subject necessary, called upon the Board for a full report upon it. The Board, after consulting the collectors, reported their opinion that, though there was no sufficient reason for the exceptional position allowed to the three districts, the privileges could not be at once withdrawn, but that measures tending to the eventual abolition of the manufacture should be adopted. They recommended that it should be restricted to certain specified places, and that a monopoly system, similar to that on the coast, together with the grant of discounts or drawback to merchants importing sea-salt into the Ceded districts should be introduced. As an alternative, they suggested the prohibition of the manufacture and the establishment of inland depôts where sea-salt should be sold by Government establishments. The Government, it need scarcely be said, rejected these suggestions; and, remanding the subject for further consideration, directed that, in lieu of the license fees which had been levied from the manufacturers under the License Tax Act, the old payments in Bellary should be demanded, not as moturpha, but as salt revenue. Further reports and discussion ensued, and eventually the Government, observing that the manufacture could neither be excised nor monopolized, and consequently that it must be continued on its existing footing, adopted the former alternative; on the ground that earth-salt as an article of human consumption was being rapidly superseded by marine salt, and as only used by the most indigent classes and given to cattle; and that when the highway was finished the supersession of earth-salt would be complete. This decision, like the previous ones, was approved by the Home authorities.

274. In October 1870, Government, observing that the then recent enhancement of the monopoly price and the extension of the railway necessitated the reconsideration of the question, called upon the Board to report as to the expediency of declaring the manufacture of earth-salt in Bellary, Cuddapah and Kurnool illegal, and whether the enhancement of the price of monopoly salt had tended to stimulate the manufacture; and in February 1871, the Board were also directed to report on importation of earth-salt from Mysore. In their Proceedings, 17th August 1871, No. 3487, the Board summarised the previous discussions, and arrived at the conclusions that importation from other places into the three districts was inconsiderable; that the enhancement of the price of monopoly salt must have tended, though in what degree it was impossible to say, to stimulate the manufacture of earth-salt; that the latter could be produced at a cost which enabled it to undersell and supplant sea-salt notwithstanding the extension of the railway; and that the time had come for the definite suppression of the manufacture, which they recommended should be carried into effect from the beginning of 1873-4. The Government, in February 1873, expressed the opinion that the manufacture could not be at once suppressed, and that suppression, if it could be effected, would only stimulate importation from Hyderabad and Mysore, from the Jaghire of Banganapalli. They thought the best course would be to

excise the manufacture, retaining only the best modas, and compensating the owners of those which were closed; and they appointed Mr. Thornhill, a Member of the Board of Revenue, to investigate the matter on the spot and report how the duty should be fixed and levied. They apparently did not reflect that restriction of the production, or full taxation of the produce, would stimulate importation as much as suppression would.

275. Mr. Thornhill submitted his report in March 1873. His recommendations were that the manufacture should be gradually suppressed by closing a certain number of modas each year, with compensation at the rate of four or five years' net profits; that the best modas producing white salt fit for human consumption should be first suppressed, and that eventually only those producing inferior red salt consumed by cattle should be retained; and that enhanced license fees ranging in four classes from Rs. 2-8-0 to Rs. 20-0-0 should be imposed on the modas allowed to continue. He also suggested that arrangements should be made with the Nawab of Banganapalli and the Mysore Government to restrict the manufacture in those States, and that preventive posts should be established at ferries on the Kistna and Tungabhadra rivers to prevent the ingress of earth-salt from Hyderabad.

276. The Government on this report directed that the opening of new places of manufacture should be prohibited, and that those in existence in all three districts should be taxed from 1874, with reference to their productive capacity, at rates gradually increasing until in 1879 the full duty of Rupee 1-13-0 per maund should be imposed. It was anticipated that increase in the rates would lead to the closing of many salt factories, and that all would be voluntarily closed before the highest rates of duty were reached. It was directed that at the same time "every effort should

	Rate per gallee, of estimated out-turn.		Rate per maund of estimated out-turn.	
	RS.	A.	RS.	A.
1874.....	12	0 0	0 1	7 2
1875.....	25	0 0	0 3	4
1876.....	60	0 0	0 6	8
1877.....	100	0 0	0 13	4
1878.....	150	0 0	1 4	0
1879.....	217	8 0	1 13	0

"now be made to induce the voluntary cessation of manufacture by the offer of liberal compensation in every case, calculated on the terms proposed by Mr. Thornhill." In pursuance of these orders the Board directed the Collectors to make a rough classification of the modas and framed a scale of rates (reproduced in the margin on which the license fees were to be regulated with reference to the estimated out-turn. This scale was introduced from the season of 1874.

277. As regards importation from native states, the result of the correspondence which took place has been that the Nawab of Banganapalli has agreed to introduce for regulating the manufacture in his state the same measures as are adopted in British territory; in Mysore the manufacture of earth-salt within five miles of the Madras frontier, and the exportation of the commodity into the Madras Presidency, have been prohibited and made penal; and, as regards Hyderabad, it was stated that earth-salt is manufactured only in a few villages in the Raichore and Nagarkurnool districts, and that the quantity produced is consumed locally; but His Highness the Nizam's Government have prohibited the exportation, thus making earth-salt an exception to Art. III of the Treaty of 1802.

278. The manufacture was untaxed in Cuddapah until the new system was introduced;* but in Bellary a moturpha tax on the manufacturers, which passed afterwards into fees upon modas, has been levied from the first. Transit duties were

also levied up to 1844. The following statement shows the progress of the revenue from earth-salt in Bellary under the old system:—

Fashi years.	Number of persons engaged.	Tax. Rupees.	Transit duties. Rupees.	Total. Rupees.
1215	1,338	12,590	Duty not known.	12,590
1221	1,540	12,807		12,807
2229	1,932	13,615	3,596	17,211
1243	1,891	11,087	3,876	14,963
1248	1,939	11,648	3,365	15,013
1252	2,065	13,060	3,093	16,153
1264	...	11,628	...	11,628
1267	...	10,150	...	10,150
1270	...	10,295	...	10,295
1275	...	11,000	...	11,000
1281	...	11,142	...	11,142
1282	...	13,204	...	13,204

In Kurnool fees were levied from early times. The amount collected (partly transferred villages) was in Fashi 1270, Rs. 1,392; in Fashi 1272, Rs. 2,093; and in Fashi 1282, Rs. 1,842. The collection or demand for the three years during which the licensing system has been in force are as follows:—

	1874. (F. 1283) Rs.	1875. (F. 1284) Rs.	1876. (F. 1285) Rs.
Bellary	10,441	20,813	19,307
Cuddapah	8,746	8,979	10,288
Kurnool	4,332	8,531	7,953
	18,399	33,328	37,558

279. Having thus briefly sketched the mode in which the earth-salt manufacture in these districts has been dealt with, and the footing on which it is now conducted, we propose, before attempting to investigate the effect of the measures of 1873, to describe the method of manufacture and to give such information as we have been able to collect as to the quality, cost of manufacture, and retail prices of the salt.

280. The manufacture is well described in the following extract from Mr. Thornhill's report. The manufacturing season lasts about three months.

"A moda consists of (a) one, two, or three earthen basins in which the process of evaporation goes on, (b) one or two reservoirs, (generally one), lined with a coating of smooth chunam at a lower level than the basins, into which the brine from the basins is conducted by a small channel, generally lined with chunam and covered with stones and earth; and (c) a set of evaporating pans, carefully levelled and plastered with chunam, into which the brine from the reservoirs is poured by means of chatties, and where it is allowed to stand until it is inverted into salt by solar evaporation.

"A moda is worked by men and buffaloes; ordinarily by two men and one buffalo; sometimes by as many as four men and four buffaloes; and occasionally by two men without the aid of buffaloes.

"The basins," which are built up at the beginning of the season, and carefully lined with stiff clay, have each a hole in the bottom communicating with the channel. The mouth of this hole is stopped with twigs which are covered over with sand. The basin is then filled with salt-earth, and water is poured on it until it is fully saturated; after the lapse of three or four hours the brine begins to flow through the channel into the reservoir beneath, from whence it is transferred to the evaporating pans.

"The salt-earth is collected from the adjacent lands, where it effloresces. Its presence is covered by the powdery appearance of the soil, and, wherever it is found, it is scraped up, and carried to the modas by the buffaloes. The powdery surface only is scraped up.

* A sum of Rupees 250 per annum was stated to be realized when the Board reported in 1863, probably in full transferred from Bellary or Kurnool.

"The ordinary size of a basin is 4½ to 5 feet in diameter, and 2 to 2½ feet deep."

and it takes a considerable time to collect a buffalo-load. Sometimes men have to travel from one to two miles to procure a sufficiency of earth to fill the basin.

"The modas are generally formed on the top of high mounds of earth. These mounds are simply formed by the refuse-earth which is cast out of the basins after each washing. The basins are formed on the top of the mound only for the convenience of being near the reservoir and pans. They are re-made year after year, until the mounds become so high that the labour of carrying up the earth is too great for the buffaloes; they are then abandoned. I have seen modas worked on mounds twenty feet high, and I have seen newly constructed modas with the basins not more than two feet from the ground.

"It is by no means universally the case that the efflorescence of common salt whitens the ground. When the ground is whitened, it is generally by the presence of soda, known to the people as washerman's earth.

"The time occupied in producing salt varies considerably; in some places the brine resulting from two fillings of the basin, is poured on the pans and produces salt on the third day, which is then scraped up; in other places, the brine produced is added day after day to that in the pans for five or six days, and the whole scraped at once about the eighth day; the pans in the latter case are larger and deeper than in the former."

The manufacturers belong to a caste called "Upparas," who are scattered over the country, a few families only, as a rule, being found in each village.* Mr. Thornhill says;—

"They are as a body undeniably poor; so far as I could learn there is not a rich man amongst them. It was acknowledged on all sides that, beyond making a livelihood for about half the year, they had no tangible profit; some few hold land on patta to a trifling extent; others work for cooly during the season when salt is made; some are employed in carrying stone and earth for building purposes by means of their buffaloes; some carry the surplus salt about the country for sale. A certain amount of property is acknowledged to exist in the modas and occasional disputes arise; but they possess no saleable value whatever, and no one ever heard of a salt moda being attached for arrears of revenue or in satisfaction of a decree of Court."

281. As to the quality of the salt Mr. Thornhill thus describes it:—

Quality.

"The quality of the salt varies greatly in different localities; that produced from the black cotton soil is generally the best; it is pure white and of well-formed but small crystals; that produced in red soil is of a dirty red appearance and the crystals are flat and flaky. The former is largely used for human consumption; the latter exclusively for cattle."

282. We have obtained numerous specimens of the salt and have had them analysed by Dr. Hazlett. The details, together with a description of the physical characteristics of the salt, will be found in Appendix A. Nine specimens, three from each district, were analysed in full detail, in the same way as the platform sea-salts, and twelve were bazaar specimens and analysed as such. The method will be found described in the chapter on quality and in Dr. Hazlett's report. The full analyses give the following average percentage results:—

	Cuddapah.	Bellary.	Kurnool.	Total.
Moisture.....	6.503	8.250	8.876	6.229
Insoluble matter, inorganic.....	3.68	813	1.331	1.011
Do. do., organic.....	123	083	112	111
Sodium chloride.....	81.262	82.365	84.961	82.806
Magnesium chloride.....	2.623	1.633	2.523	2.583
Calcium chloride.....	.....	1.42	1.44	2.02
Magnesium sulphate.....	.....	264	.....	0.53
Calcium sulphate.....	1.753	1.242	2.211	1.733
Sodium sulphate.....	4.742	0.939	4.150	4.357
	97.903	100.144	99.625	99.325

From these analyses the Cuddapah salt would appear to be the worst and that of Bellary the best. Two of the Bellary specimens are fully equal, if not

* According to the Census report the numbers are:—

	Population.	Per cent. of population.
Cuddapah.....	11,231	0.83
Bellary.....	31,470	1.10
Kurnool.....	113,022	1.43
	56,493	1.34

superior, to the average marine pan-salt; but the average is reduced by the third specimen, which contains a very large proportion (16 per cent.) of sulphate of soda. Judging from the analyses of the bazaar specimens of earth-salt, the specimens which have been fully analysed appear to be better than the average. The following are the averages (per cent.) of the bazaar specimen analyses:—

	Cuddapah (4 Specimens.)	Conjeeveram (1 Spec.)	Wallaja (1 Spec.)	Total from Cuddapah: (6 Specimens.)	Bellary: (3 Spec.)	Kurnool: (3 Spec.)	Total. (12 Spec.)
Moisture.....	8.426	9.788	3.463	7.625	7.451	6.985	7.522
Insoluble matter, inorganic.....	2.061	1.603	2.319	2.023	1.263	1.890	1.782
Do. do., organic.....	316	219	356	312	252	236	273
Chlorides.....	74.002	69.030	88.042	75.514	85.800	86.970	80.449
	84.803	80.670	91.180	95.680	94.751	95.991	90.526

The specimens from Conjeeveram in Chingleput, and Wallaja in North Arcot are doubtless importations from Cuddapah and have accordingly been grouped with those direct from that district.

283. It is to be remembered that in these analyses the percentage of total chlorides includes those of magnesium and calcium; and assuming that these salts are present in the same proportion as in the specimens fully analysed, the average percentage of chloride of sodium would be reduced to 78.1 per cent. It is to be presumed that the proportion unaccounted for in these analyses consists of sulphates of soda and lime; indeed, as regards the Conjeeveram and Wallaja specimens, Dr. Hazlett has noted that sulphates were largely present. It will be useful to reproduce here, for comparison the results of analysis of ten specimens of earth-salt given in Mr. Plowden's report after Dr. Mayer. The average is as follows:—

Moisture.....	7.20 per cent..
Sand and dirt.....	5.04 "
Chloride of sodium.....	81.44 "
Bases and acids.....	7.32 "
Total....	100.00

The bases and acids showed qualitatively nitrates of potash and soda, but in insignificant quantity. It is to be noted that Dr. Hazlett found nitrates indicated in only one specimen. Analyses of ten specimens were obtained by Mr. Thornhill, and are stated to have averaged 86 per cent. of chloride of sodium, while the composition of the salt differed little from that of sea-salt.

284. The recent complete analyses do not show any falling off in the quality of the salt since 1854; though, from the extension of the manufacture which, as will be seen below, has undoubtedly taken place, we should be prepared to find this to be the case. Since Dr. Mayer's analyses, the opinion has been accepted that the earth-salt of the Ceded Districts is a wholesome condiment and not to be objected to as an article of consumption; but it seems to vary very greatly, and even the inferior kinds appear to be used for human diet. The bazaar specimens were presumably intended for human consumption, and some of them show only 52, 69 and 71 per cent. of chlorides. The worst sea-salt analysed gave 74.6 per cent. of chloride of sodium; and if the balance of the specimens of earth-salt just adverted to consisted, as is probable, of sulphate of soda, the salt cannot be wholesome; sulphate of soda being a strong purgative. The best and possibly the average earth-salts are not deleterious, but it would appear that even the worst are exported through the country, and it is doubtful whether the assertion that only the best qualities are consumed by human beings is correct.

285. As to the cost of manufacture, and the selling prices in past years, the information on record is very meagre and uncertain. The cost of course varies considerably, chiefly with reference to the extent of the supply of saline earth, and the distance which it has to be carried to the moda. In the Board's memorandum which forms Appendix B to Mr.

Plowden's report, the cost is stated to be in Cuddapah from 10 to 24 Rs. per garce or from Rs. 0-1-4 to Rs. 0-3-2 per maund. In 1862, the Collector of Bellary stated it from Rs. 0-2-4 to Rs. 0-3-10 per maund. In 1863, the cost was stated 150 Rs. per garce in Bellary and Rs. 140 in Kurnool, or Rs. 1-8-0 and Rs. 1-2 per maund; rates which are evidently excessive, being greater than the average prices fetched by the salt. In Cuddapah the profits were estimated for settlement of compensation for closure of modas at one-fourth of the selling price, and the cost accordingly at three-fourths. The rates per maund were as follows:—

	Price.			Cost.			Profit.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Badwel	0	13	4	0	10	0	0	3	4
Sidhout	1	0	5	0	12	4	0	4	1
Rayachoti	0	8	11	0	6	8	0	2	3
Prodatur	0	12	0	0	8	0	0	4	0
Cuddapah	0	12	0	0	8	0	0	4	0
Pallampett	1	5	4	1	0	0	0	5	4
Pattikonda	0	13	4	0	10	0	0	3	4

These figures do not seem very reliable. The principle of assuming the profit at one-fourth of the selling price is misleading. The salt could not be sold in Pallampett at prices 75 per cent. higher than in the adjoining taluk of Cuddapah. The cost may probably, we think, be stated to be from 1 to 4 annas per maund.

286. As to the selling prices, the Board stated in 1854 that the salt fetched in Bellary 100 Rupees a garce, and in Cuddapah 100 to 133 Rupees; equal to from Rs. 0-13-4 to Rs. 1-4 per maund. The following notices of price from time to time are also on record. In 1812, the price was stated to be from $\frac{1}{2}$ to $\frac{3}{4}$ that of sea-salt in Bellary. In Cuddapah it was Rs. 0-15-6 in 1823; Rs. 0-5-1 in 1829 (probably the inferior quality); Rs. 0-13-4 in 1848; Rs. 0-5-8 in 1863; Rs. 0-13-4 in 1871, and from 0-8-6 to Rs. 1-1-9 in 1873. In Kurnool the price was given at Rs. 1-5-4 in 1861 and in Bellary in 1873, the best sort fetched Rs. 2-3-6. The bazaar specimens which we obtained give prices in Kurnool ranging from Rs. 0-5-7 to Rs. 0-11, and Rs. 0-13-8 and Rs. 1-6-4 in Cuddapah.* The prices do not appear to have risen materially with the increased duty on monopoly salt; though it is stated in some of the papers on the subject that the price is regulated to a great extent that of sea-salt, of which in these districts the cost of carriage has always formed a high proportion. Thus the Collector of Cuddapah in 1871 writes that sea-salt used to cost, before the opening of the railway, Rs. 0-1-8 per seer; but on the extension of the railway the price was reduced to Rs. 0-1-4. This was met by a corresponding reduction in the price of earth-salt, and thus the extension of the railway has been beneficial rather in reducing the price of salt to the consumer than in increasing the consumption of monopoly salt. The earth-salt manufacture has not supplied the whole consumption, and therefore the price it could command would approach that of sea-salt within certain limits determined by the difference of quality; i.e., the earth-salt trader would be able to appropriate to himself as profit a large proportion of the duty and transit charges which enter into the price of the sea-salt. It seems that the price has usually ranged from one-fourth to half that of sea-salt. In Appendix D, will be found the rates yielded by the bazaar specimens of earth-salt which we obtained from Kurnool.

287. As regards the quantity of earth-salt produced in the three districts, various widely discrepant estimates have been given. There is no doubt that the manufacture has increased. Thus the number of modas stated to

* The last mentioned specimen was from Madanapatti, which is not a taluk in which earth-salt is

343 and the number of those returned in 1873, according to the classification of the Collectors to be presently noticed, were

	1848.	1873.
Bellary	2,805	3,553
Cuddapah	1,708	1,697
Kurnool	60	2,281
	4,573	7,531

The three districts, therefore, show an increase of 65 per cent. The numbers in the particular districts cannot be compared, because in the period in question the attikonda taluk from Bellary, and the Kovilkuntla, Cumbum and Markapur taluks from Cuddapah, were transferred to Kurnool. At the time of the transfer the manufacture was supposed to be prohibited in the three last-mentioned taluks, and in 1863 the Collector stated that the permitted manufacture was confined to Pattikonda, the four taluks of Kurnool proper and to a few villages transferred from Sirwell to Kovilkuntla. The number of modas in the district of Kurnool in 1861 was returned 381, of which 234 were in Pattikonda. Two years later the number had grown to 536, of which 295 were in Pattikonda. The 60 modas of the year 1848 had then increased to 241. The Collector stated that in the taluks where it was prohibited the manufacture was of very trifling extent; but the probability is that in these cases prohibition merely meant exemption from taxation. In 1871 the number of modas taxed was 546, and it was estimated by the officer in charge that there were 1,000 untaxed modas at work in Cumbum and Markapur. In 1873, the numbers were found to be as noted in the margin.

Pattikonda	314
Amalakota	152
Indikothur	5
Udhal	133
Kovilkuntla	34
Sirwell	49
Cumbum	1,220
Markapur	365
Total	2,250

288. The manufacture in Cuddapah has always been confined to the principal division; and the four south-western taluks† constituting the sub-division are free from it. The north-west portion of the district, in the valley of the Pennair river, seems the most productive. The distribution of the modas as found in 1873 is given in the margin. The best salt is made in the Junnamadugu taluk. The manufacture occurs in all the taluks of Bellary. The taluk of the same name is the most productive, possessing less than 1-10th of the modas, but producing more than one-fourth of the whole out-turn.

289. The following statement shows the estimates which have been made from time to time of the quantity of earth-salt produced.

	1848	1851	1862-3	1863-67	1869-71	1871
Bellary	1,34,760	1,59,600	84,500	.....	.....	84,000
Cuddapah	1,23,000	1,61,400	25,680	Av. 33,120 ⁵	Av. 42,480 ⁶	54,720
Kurnool	3,000	.....	18,900	.....	.....	.....
	2,60,760 ⁷	3,21,000 ⁸	1,29,080			

The earlier estimates seem to be nearer the true out-turn than those of more recent years. Mr. Thornhill taking the number of modas at 5,000 and the average out-turn at 3,000 Madras measures (112½ Indian maunds) estimated the produce at 4,687 garce, or 5,62,440 Indian maunds. According to subsequent enquiries, it will be seen, his estimate of the average out-turn was too high, but his estimate

† Bellary, Kovilkuntla, Nandial and Nandikothur.

† In modas were, however, found in Rayachoti, the most northern of these, in 1873.

† is obtained from the value of the produce and the rates per garce given in the Board's Proceedings, 10th

† Elliot's Minute, 21st May 1851.

† The Collector gives 1340 and 1770 putties. A Cuddapah putty seems to be usually 960 pukka seers or 24 Indian (Bayley's Memo. on Weights and Measures, p. 75).

of the number of modas too low. Again he stated, after considering the probable imports of sea-salt and the information he had collected as to the consumption of earth-salt, that he could not be far wrong in assuming that 3 millions, or about three-fourths of the population of the three districts, consumed no sea-salt. At 12 lbs. per head this would give 4,37,500 Indian maunds, and considering that the salt is expended to no small extent as well as given to cattle and used for curing hides, the estimate seems within the mark.

290. We have obtained from the Collectors of the three districts, detailed information as to what has been done under the orders of 1873. The classification of the modas with reference to the out-turn gives for each year the following results:—

Districts.	1873.				1874.				1875.				1876.			
	Number of modas.	Number of villages.	Estimated out-turn.	Out-turn per moda.	Number of modas.	Number of villages.	Estimated out-turn.	Out-turn per moda.	Number of modas.	Number of villages.	Estimated out-turn.	Out-turn per moda.	Number of modas.	Number of villages.	Estimated out-turn.	Out-turn per moda.
	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.
Bellary	3,353	979	233,230	70	2,207	725	131,975	59	2,468	775	136,737	55	1,472	619	66,464	44
Cuddapah	1,697	275	116,518	69	868	126	37,335	43	761	172	13,100	17	477	143	24,000	50
Kurnool	2,221	282	97,710	43	811	194	36,291	45	829	220	37,134	43	539	186	21,600	40
	7,531	1,540	427,458	56	3,740	1,045	165,601	55	4,098	1,167	177,021	53	2,488	950	112,064	45

NOTE.—For 1873, 242 modas in the Alur taluk in Bellary are not classed; but the out-turn is estimated average found for the same taluk in 1874. Of the modas (3,220) in Cuddapah taluk (Kurnool) in 1873, 156 were in state and 303 unlicensed.

No new taxation was imposed in 1873, and the numbers of given for 1874, 1875 and 1876 are those for which licenses were taken out. It is observed that there was a large falling off in 1874, followed by an increase in 1875 notwithstanding the enhancement of the tax from 1 anna 7 pie to 3 annas 4 pie maund. The explanation must be either that the moda owners thought the manufacture was entirely prohibited in the first year of the new system, or that arrangements for enforcing the taking out of licenses were not matured or inadequately worked. In Cuddapah, it is stated that 1018 owners presented requisitions, but some were permitted to withdraw them and hence the increase in 1875. In Kurnool, 557 modas were finally abandoned in 1874, but 913 more were left unused, or at least unlicensed, in that year. In 1876 when the tax became 3 annas and 8 pies per maund, there was a still further large decrease in all the districts. The estimated out-turn fell to little more than a fourth of that assumed for 1873.

291. The orders issued do not appear to have been clearly apprehended except in Cuddapah. The intention was that the classification as to estimated out-turn made in the first instance should be the basis of future taxation; but the Collector of Kurnool says that under the new system "the classification of modas was abandoned," and in that district the actual out-turn of the modas is supposed to be ascertained each year on personal inspection by the revenue inspectors and heads of villages, in fact the manufacture is excised, the fees at the rate ordered for each year being levied on the actual out-turn as reported. Thus the actual out-turn in 1873 is stated at 59,738 maund and that ascertained in 1874 and 1875, respectively at 41,671 and 40,948 maund. The same plan appears to be adopted in Bellary. The Collector writes, "The out-turn is estimated every year, and the prescribed tax is levied on the estimated amount." In Cuddapah, however, the original classification is adhered to in some cases (4 in the Jamrahnamadugu taluk) where moda owners have been manufacturing more than was estimated in the license, they have been punished. This does not appear to have been in accordance with the orders when the orders were passed.

292. The classification appears to have been very unequal. Thus in Bellary district, 172 modas in the Tadpatri taluk are divided into 30 classes; 237 in Gooty into 29; 201 in Harpanhalli into 28; 243 in Alur into 23; while only one class is made for Bellary taluk with 356 modas; for Kudlighi with 162; for Raidrug, with 1; Dharmavaram, with 164; Penakonda, with 373; Hindupur, with 243; and Adakshira, with 379. In Kurnool, the highest number of classes is 3, while 3 taluks have only one class each. In Cuddapah the highest number of classes in a taluk is 20; the lowest 1. The following table shows the classification of the modas reduced to a common standard.

Estimated out-turn in Maunds.	1873.				1874.				1875.				1876.			
	Bellary.	Cuddapah.	Kurnool.	Total.	Bellary.	Cuddapah.	Kurnool.	Total.	Bellary.	Cuddapah.	Kurnool.	Total.	Bellary.	Cuddapah.	Kurnool.	Total.
	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.	I. M.
0	243	49	46	243	21	25	46	65	1	34	100	94	30	124	124	124
1	420	25	102	557	369	89	440	399	9	66	494	404	81	485	485	485
2	119	26	116	246	359	67	417	324	110	434	388	72	460	460	460	460
3	950	442	1,248	2,640	543	274	285	1,300	579	274	895	1,256	179	210	151	540
4	1,248	623	736	2,477	585	279	321	1,185	574	328	259	1,200	209	220	192	621
5	197	251	44	448	54	90	114	111	110	221	50	31	81	81	81	81
6	112	241	39	392	48	55	33	136	35	41	35	111	1	16	19	36
7	341	91	432	864	306	...	306	276	...	276	156	...	156	...	156	156
	3,353	1,697	2,221	7,531	2,267	668	811	3,746	2,468	761	829	4,098	1,472	477	539	2,488

293. In Bellary the most productive moda is rated at 180 maunds; the least at 1. In Cuddapah the highest is 160 maunds; the lowest $1\frac{1}{2}$; in Kurnool, highest, 114 maunds; the lowest, $4\frac{1}{2}$. The classification gives an average of maunds and probably does not err on the side of stringency, since Mr. Thornhill estimated the average at 112 maunds.

294. The decrease in the average out-turn per moda (see Statement supra p. 290.) would seem to indicate that the system of taxation adopted by Government pressed especially upon the larger modas, and thus produced the effect described by Mr. Thornhill when he proposed that those producing the better kinds of salt, which are also the largest, should be first selected for closing. This appears to be the case in Cuddapah, where the classification has not been altered since 1873; but on the analysis of the classification above given, it will be apparent that the decrease in the average out-turn is due in Bellary and Kurnool to increasing quantity in the estimate of produce in proportion as the rate of taxation has risen. There are, however, as will be seen presently, strong reasons for believing that the out-turn of the modas kept open has increased in consequence of the closure of others.

295. If the figures just given, which form the basis of taxation for the current year, can be trusted, there has been a decrease in the quantities of earth-salt made in the last three years as compared with 1873, to the following extent:—

Years.	Decrease in Indian Maunds.	Percentage on the out-turn of 1873.	Decrease in number of modas.	Percentage on the number of modas in 1873.
1874	216,012	51.2	3785	50.3
1875	204,893	48.6	3438	45.7
1876	309,120	73.2	5043	66.9

In the papers relating to compensation, it appears that some of the modas in Sidhout taluk were estimated at 512 maunds, but the Collector reduced the estimate to 160 maunds on the ground that the Sidhout modas are equal to those in Cuddapah taluk where the highest yield was 160 maunds. The Sidhout modas were all in 1873.

The average estimated out-turn for the modas relinquished in 1874 was 94 maunds, considerably above the

But the statistics which we have obtained from the Collectors, as to the number of villages in which the manufacture was carried on in each year, tend to show that much of this decrease is fictitious, and that the out-turn has certainly not decreased in proportion to the number of modas closed. The chief difficulty and expense of the manufacture is the collection of salt-earth, of which the supply is limited, and which has in some cases to be brought considerable distances; and, when some modas are closed, it becomes easier for the rest to obtain the supplies they require, and they are worked to their full capacity. If the number of modas be compared with that of villages in which the manufacture is carried on, the following results are obtained:—

Districts.	Number of modas to each salt manufacturing village in			
	1873	1874	1875	1876
Bellary* ...	4.3	3.9	3.9	3.1
Cuddapah ...	6.2	5.3	4.4	3.3
Kurnool ...	8.0	4.2	4.0	2.9
	5.4	4.2	4.0	3.1

From these figures it would seem that the facility of supply is increased at least in the ratio of 5 to 3, and the out-turn probably in a not less proportion.

The same fact may be stated for 3 years thus:—

Districts.	Modas decreased per cent.	Estimated out-turn decreased per cent.	
		decreased per cent.	decreased per cent.
Bellary ...	58.6	68.1	45.5
Cuddapah ...	71.9	78.9	47.2
Kurnool ...	76.3	77.6	34.9
Mean ...	66.9	73.2	43.6

296. The Acting Collector of Cuddapah thinks that in many cases beside those detected in Jammalmadugu the out-turn is in excess of the quantities specified in the licenses, and he is not prepared to assert that the decrease in produce has been proportionate to that in number of modas. He says also that prior to the establishment of the new system the manufacture was carried on to a certain extent *sub rosa* but that now it is openly conducted and a superior kind of salt manufactured. The Collector of Bellary writes, under date 22nd June 1876, that there is no difficulty in obtaining salt earth for licitiation, and that the existing modas are reported to be capable of working up the whole available supply. The Collector of Kurnool appears to think that the out-turn is accurately ascertained; but the Collector of Cuddapah says that without a large special establishment it would be impossible to check cases of over-manufacture.

297. Had there been so large a decrease as 3 lakhs of maunds in the production of earth-salt, or a quantity approaching that, the imports of sea-salt into the three districts must largely increased. But we shall see elsewhere that

* In the Tadpatri taluk return, the number of villages, 127, (which is in excess of the greatest number of taluks in any year) is entered throughout. The number given is apparently the number of villages in taluk. We have omitted this value from the average now given.

salt by rail from Chingleput have continued to decrease steadily up to March 1876. The decrease has been specially marked in the last three years. The railway authorities attribute this steady decrease partly to the competition of other modes of transport, but mainly to the increasing manufacture of earth-salt; and have introduced (G. O., 14th June 1876, No. 1,478) a reduced rate of 6 pies per ton per mile for salt carried from Madras to stations north of Tirupatti, with a view to stimulate the railway traffic in sea-salt. The only source of supply other than Chingleput, is the works in the Nellore district,

	Fasli 1283. Indian maunds.	Fasli 1284. Indian maunds.	Fasli 1285. Indian maunds.
Ganjam.....	1,12,002	1,53,524	1,56,230
Arti.....	1,55,619	1,36,937	1,34,458
Arti.....	1,65,619	1,42,508	1,07,749
Arti.....	96,513	1,15,537	94,779
Arti.....	17,085	16,919	16,356
Arti.....	5,455	28,506	31,737
Arti.....	600	21,540	21,015
Arti.....	557	96,578	94,793
Arti.....	11,478	19,047	22,323
Arti.....	78,715	84,188	66,331
Arti.....	12,179	14,776	13,580
Works.....	6,72,348	6,83,886	5,67,535
Nete Total.....	7,35,350	8,77,410	6,73,825

Chinna Ganjam in Kistna. The net sales at these works for the last Fasli years, are given in the margin, and shew a large decrease in this period. The decrease which appears in Fasli 1284, (1874-5), occurred chiefly at Chinna Ganjam whence little salt is ordinarily carried to Kurnool.* The Kistna sales are 3 lakhs of maunds in 1875-6. It is thus unquestionable that a reduced

Number of manufacturers.
3,322
3,332
3,273
3,120
2,714
2,757
2,638
2,611
3,432
3,334
3,609
2,832

quantity of sea-salt has during the last two years been thrown into the Ceded Districts; and the supposed decrease in earth-salt manufacture could only have been supplemented from Mysore, Banganapalli, or Hyderabad. The marginal figures extracted from the Mysore Administration reports seem to shew decreasing manufacture in that province; and the price of Mysore earth-salt, which is said to average Rs. 1-6-2 in Mysore itself, would place it at a disadvantage as compared with the increase in competing with sea-salt in the Ceded Districts. We have no doubt to what is being done in Banganapalli under the arrangement made in 1874, but it is improbable that the manufacture in that tract would increase to the supposed deficiency. The manufacture in Hyderabad is, as has been said, and import thence would have attracted attention.

Indeed, so far from import of earth-salt taking place into the Ceded Districts, all the evidence goes to show considerable and increasing export thence. As regards the railway traffic we find that in 1873-4 (omitting the quantities sent from station (thin the district) 409 maunds went from the Cuddapah to the Bellary 365 and 843 maunds from the latter district to Sholapore and Rajahmundry. In 1874-5 the Cuddapah exports by rail increased to 3,466 maunds and the exports to Chingleput, North Arcot, and Mysore, and even to Sholapore, and Bellary also sent salt to Sholapore and even to Nagpore. In 1875-6 the Cuddapah exported 8,200 maunds by rail and Bellary 10,710 maunds, and the Nagpore, Omraotee, and Secundrabad on the one side, and to all the stations on the Madras Railway except Malabar on the other. This quantity is not so large as that imported into the two districts from Madras; there can be no doubt that the salt so exported was earth-salt, and the figures prove the existence of a lively trade in that commodity. In April 1876, the Collector of Nellore, with reference to the Board's ruling of March 1875, to the effect that the transport of earth-salt could not be prevented, reported that cases of import of earth-

* The declarations from the whole Kistna district for Kurnool averaged for five Fasli years ending 1284 only 25 lakhs.

export to Conjevaram has been especially complained of and our bazaar specimens comprise earth-salt sold at Wallaja in North Arcot.

The ruling has been approved by Government and is acted on.

	Cases reported.	Salt seized.	Average.
		Sacra.	Seera.
1871.....	10.....	492.....	49
1875.....	21.....	2,914.....	184
1876 (8 months).....	11.....	375.....	34

of those which occurred; but the figures show increasing export.

299. Again, had the supply of salt been so materially diminished, we expect to find the prices largely increased. The information above recapitulated as to the earth-salt does not show any increase in the price at the present date with earlier dates; and as to the price of sea-salt there has been no increase since 1875 at least, as the following figures show:—

	Cuddapah.			Bellary.			Kurnool.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
April 1875.....	2	8	7	.....	.....	.....	.....	.....	.....
July 1875.....	2	7	5	2	14	10	2	13	.....
May 1876.....	2	7	6	.....	.....	.....	.....	.....	.....
June 1876.....	.....	.....	.....	2	14	7	2	11	.....

300. All the evidence, therefore, points to the conclusion that the consequence of the recent measures, if the manufacture continues in unlicensed modas, or in the houses of the licensed modas turn out far more than is supposed. It is probable that the causes have operated. With the enhancement of taxation, the manufacture and of excess manufacture in licensed modas will become difficult. The Collector of Cuddapah declares that without a special provision of the village officers and revenue inspectors which is relied upon in the other districts, must be utterly inadequate, even if it were trusted to the village inspectors number at most three to a taluk, and the village officers frequently absent, have multitudinous calls upon their time. Salt is scraped in, and carried away from the modas; and it is absurd to suppose that village officers can estimate the out-turn with any approach to accuracy. Even an estimate of the possible out-turn must in the last resort be a mere guess, derived from them, and must always be uncertain. The practice of licensing the modas has, it is seen, already become an attempt to execute in Kurnool; and the system is in fact open to all the objections and discussions that have taken place, in which it has throughout been a failure. The Collector of Kurnool in 1863 and 1864, in the suppression of the manufacture in preference to any attempts to place the same footing as sea-salt. It seems to us that simple prohibition is the proper course to adopt even now; and that considering the loss of revenue now undoubtedly lost, estimated by Mr. Thornhill at from Rs. 10,000 to Rs. 15,000 annually, it would pay to organize an establishment on the model of the branch of the Inland Customs Department to carry out the suppression of the manufacture which have from time to time prevailed, and the continuance of the manufacture, viz.:—the hardship which would befall the people, the deprivation of means of livelihood to a considerable class, injury likely to result to agricultural stock, cannot now be urged, since the measures taken in 1873, amount to an abandonment of them. The salt cannot if taxed on a level with sea-salt compete with that commodity, even allowing for the cost of carriage from the coast. This cost is in itself not high, as will be seen from the following table, which shows the difference in price between sea-salt and the salt made in the inland country in large quantities. The difference in price is not great, but it is enough to make the inland salt uncompetitive with sea-salt, and will do so yearly as communications, on which considerable improvement has been made, are improved. The difference in quality, judging from some cases in which as great a difference in price is

of superior quality elsewhere, will outweigh the excess cost of the sea-salt, and there is little doubt that, if the effect intended to be produced by the recent measures were really produced, the earth-salt manufacture would die out. As between simple suppression and the present system, the sole question is, which will secure that the tax shall be paid by the inhabitants of the three districts. The present system intended to secure this, but has failed so far and can never succeed, or secure the levy of full duty. It is probable that if stringent measures were taken for a few years, fully taxed sea-salt would gain a permanent footing towards suppression of earth-salt.

301. It remains to consider whether, if suppression of the manufacture were now ordered, compensation would have to be paid to the owners of modas still working; and it will be well to first what has actually been done in this respect under the orders quoted above. These seem to have intended that compensation should be paid at the rate of four or five years' net profits to the owners of the modas then voluntarily closed. The orders have been so understood in Cuddapah and Bellary, but, as we shall see presently, the Board hold that owners should abandon manufacture at any time before the full duty becomes leviable and be entitled to claim compensation. The number of modas abandoned in 1874 in Cuddapah for which compensation has been allowed was 336, out of 1,018 which were not licensed in that year. The owners of the remainder reserved their rights to manufacture. The average out-turn of the 633 modas, (for 100 modas compensation though not claimed was granted), was 94 maunds, and the amount at 4 years' purchase of one-fourth of the selling price (for rates see above) was Rs. 49,151-13-2. From these figures the average profit seems to be Rs. 24-12-7 per garce. In Bellary 1,231 modas were given up in 1873; compensation amounting to Rupees 30 has been paid in one case. The out-turn of the modas was 40 maunds, and the profit estimated at Rs. 20 per garce. The Collector states, "Some of the owners of the other modas have since appeared and claimed compensation; and on the receipt of full information * * * statements will be submitted for sanction. Many persons, however, have abandoned the manufacture of earth-salt and taken to other modes of living without asking for compensation." In Kurnool 557 modas were abandoned in 1874, and proposals for compensation amounting to Rs. 19,525-13-9, or an average of Rs. 35-0-10, have been sanctioned by the Board. The profits were calculated at one-fourth of the gross produce, at 4 years' purchase given. The rate of profit per garce was Rupees 18-2-10. The Collector at the same time submitted to the Board the question whether compensation should be granted for 33 modas abandoned in the second year, amounting to Rs. 1,451-1-6; and the Board ruled that compensation is payable at any time before the full duty falls due. This ruling appears to us to be contrary to the intention of Government as expressed in their order above referred to, and seems unintelligible, for if the order was intended to apply to modas abandoned in years subsequent to that of the introduction of the licensing system, there is no reason for stopping compensation when the full duty falls due, but the owners of the modas, whenever closed, would be entitled to claim, and the sum to be paid would be very great, viz., at the average rates per garce hitherto sanctioned,

the principle of granting compensation for modas forcibly closed has been in all discussions which have taken place on the subject of stopping the manufacture, and the grant of such compensation was expressly ordered by the Government on one occasion. The owners whose modas were given up in 1873 had their claims recognised, and it seems now too late to discuss the principle, and impossible to refuse compensation to present owners if the manufacture is forcibly suppressed. The measure will probably not be resolved on until there will doubtless be considerable further decrease next year

as stated in the following paragraph of Mr. Thornhill's report. "24. It is worthy of remark that in 1860 (1857?) and where the manufacture of earth-salt was previously prohibited, one-half of the population is said to have taken to the use of sea-salt, made in the adjoining country in large quantities." Salt is made in only 3 villages of this taluk, viz. July 1876, No. 1791.

in the number of modas licensed. But, assuming the rates of profit per garce arrived at in the cases which have been settled, we have for the licensed modas at work in 1874, on the estimated out-turn as above stated, the following figures :-

	Rate of profit per garce.			Estimated out- turn of modas, classified in 1874.	Sum required for compensation at 4 years' pur- chase.
	RS.	A.	P.	Mauds.	RS.
Bellary.....	20	0	0	66,493	44,328
Cuddapah.....	24	8	7	24,602	20,120
Kurnool.....	18	2	10	21,699	13,144
	20	10	3	1,12,794	77,592

Some Rupees 75,000 would be required to compensate these owners, a sum which is not great in comparison with the importance of the measure of suppression. But it is observed that the orders, as they at present stand and as they have worked, merely forbid the establishment of new modas, and there is nothing to prevent the resuscitation of old ones, except of course those which have been formally abandoned and for which compensation has been paid. Owners of old pans on which compensation had not been paid might, therefore, also claim.

303. If the suppression of earth-salt manufacture in the British district carried out, that in Mysore, Hyderabad and Banganapalli will receive a considerable stimulus, and we think that suppression in those places also would be desirable and that negotiations should be entered into with that object in view.

304. We now proceed to notice the working of the arrangements for supplying salt to the French settlements in India. The several conventions with France on the subject are reproduced in Appendix C, No. 13. The French Government undertake to prevent the manufacture of salt throughout their settlements in India and further to adopt "all such measures as depend upon them ensuring the effectual prevention of the contraband trade in salt." As compensation for this, they receive two payments annually, one of 4 lakhs of Sicca Rs. the other of 4,000 Star Pagodas, equivalent in the aggregate to Co.'s Rs. 4.41. This is an actual disbursement made to secure a fair field for the monopoly. When the object might have been more cheaply gained by maintaining thoroughly effective cordons round the French settlements and allowing salt to be made inside, the question probably not within the scope of our enquiry. Political considerations enter into its solution, and indeed, as the convention of 1815 under which about one-third of the total payment is secured can only be cancelled by mutual consent, the question would have no practical use.

305. But we may legitimately examine the arrangements under which salt is supplied to the French settlements. On this subject the convention of 1818, renewed in 1837, stipulates that the British Government shall "deliver such quantity" of salt as shall be required for the domestic use and consumption of the inhabitants of the French settlements in India, the purchase, delivery and subsequent sale of the said salt being regulated according to the stipulations contained in the convention of March 1815. It may be noticed that the convention of 1815 provided for Madras was concerned, only for the fixing of the price at which salt was to be delivered by the British Government. However, the price even under that convention was fixed by a reference to the cost of British salt made in districts in the French settlements, so that the standard appealed to in the subsequent convention is not so irrelevant as might at a first glance appear. To ascertain the actual cost of British salt, the accounts of charges incurred were to be open to the French Government.

* The convention of 1815 expressly referred to the "Agents of His Most Christian Majesty" the British Government, and what this quantity might be, the phrase "reference being had to the population of the supply of Chandernagore." It is not clear under the convention of 1818 with whom the duty of quantity rests.

of a French commissioner, and the average struck every three years. The "subsequent sale" of salt by the French Government is regulated by the 4th article of the convention of 1815, by which the French Government agrees to "establish" nearly the same price for salt as that at which it shall be sold by the British Government in the "vicinity of each" French settlement. As to transport, the charges are to be borne in equal shares by the two Governments. The half cost of transport is recovered in cash.

306. In the carrying out of these stipulations the British Indian salt revenue may suffer in two ways :—(1) the price charged the French Government may not fully cover the cost of the salt to the British Government,—(2) a quantity in excess of the true requirements of the population of the French settlements may be demanded by the French authorities and the difference between the price at which salt is sold in the foreign territory and the retail price in the neighbouring British villages may be sufficient to encourage smuggling, a certain quantity of duty-paying salt being thus displaced by an article which has contributed no revenue to the British Indian exchequer.

307. With regard to the question of cost, it appears that in 1864 the Board reviewed the arrangements then in force, and found them to vary in each district of the four which enclose French settlements. The matter was referred to Mr. Burke, and after perusal of his report Government decided :—(1) that cost should include only "kudivaram, taking into store, covering, thatching, &c., and repairs to platforms, these being the items which in para. 180 of the salt memorandum set up by Mr. Bayley it is proposed to include in 'cost price' as distinguished from 'revenue charges'";—(2) that a district average for 3 years should be taken on these items and revised every 3 years;—(3) that salt should be delivered in bulk or weight according to the way in which it was received into the settlement;—(4) that a moiety of the cost of transport should be charged to the French Government;—(5) that the previous practice should be maintained as to wastage in salt, i.e., that the British Government should bear it.

308. Collectors were instructed accordingly and the Board prepared a schedule of rates to begin with, to be revised every third year. The following rates were fixed :—

	RS.	A.	P.		RS.	A.	P.
Godavery.....	11	7	4	per garce, or	0	1	6.3
South Arcot	13	4	0	"	0	1	9.2
Malabar	61	7	4	"	0	8	2.3
Tanjore	11	5	8	"	0	1	6.1

These rates were fixed on a three years' average, but not on an average of the same three years in every case. In Godavery and South Arcot they were on the average of Faslis 1272—74. In the other two districts on the average of 1275—77.

The rates in force in 1874-5 will be apparent from the following table, which are extracted from Appendix B. The actual incidence of kudivaram at 5 years, as given in Appendix D, is also shewn.

Quantity of salt sold in French in 1874-5.	Price realised.	Rate per maund.	Average incidence of kudivaram for last 5 years.
Maunds.	RS.	RS. A. P.	RS. A. P.
720	66	0 1 5.3	0 1 5.0
42,058	4,868	0 1 10.2	0 1 8.3
10,800	1,111	0 1 7.7	0 1 5.2
2,020	911	0 7 1.3	

Figures for the last 10 years are quite irreconcilable with a tariff revised every 3 years.

The comparison is not exact, as the rate for the French sales is calculated at 3 years' average, while the other rate is a 5 years' average. Still in each district there seems to be a small margin sufficient to cover the other trivial items which alone, under the orders of 1865, are to be added to the charges payable by the French Government. The margin would be larger, if in calculating the average incidence of kudivaram the divisor had not been diminished by the wastage.

310. A small loss, however, falls upon Government, owing to the fact that the salt is still delivered to the Pondicherry authorities by measure. For, though salt had long been received by weight in South Arcot, the change to weight in delivery to the French had up to 1873, through some oversight, not been made. In that year the Collector reported that the Pondicherry authorities objected to the substitution of weight for measure in the delivery of salt, unless the equivalent of a garce were taken at 5360-333 kilos. It appeared that experiments had been made at Pondicherry in 1864, and that, in the event of the substitution of weight for measurement, this equivalence had been decided upon and a "convention" entered into by the Collector (Mr. Reade), accepting these terms of conversion. Mr. Reade had acted *ultra vires*, but as the arrangement had been 8 years in force, the Board recommended that the delivery by measurement should be allowed to continue, and Government agreed.

311. If the change had been made without repudiating Mr. Reade's convention, and it could hardly with dignity have been repudiated, the loss would have been about 19 per cent. Under the present arrangements salt is delivered to the French by a measure of 424 merkals, each merkall containing 800 cubic inches. The French Government makes a requisition for so many garce of salt, (in each of two years for 360 garce); salt to this amount in garce of the standard described is then measured and sent to Pondicherry, where it is again measured to the French by the same merkall, 424 to the garce. The French Government on the number of measured garce thus ascertained, though the cost per garce calculated on the weight as received into store, not of this particular salt, but salt of the district generally. The Collector of South Arcot has given the figures

Years.	Salt as measured at English depôts.		Salt as delivered by measurement at Pondicherry.		Difference, Per cent.	
	Garce.		Garce.	Merkals.	Gar. Mer.	
1871	329		316	361	11	63
1872	432		408	21	23	493
1873	350 ¹²		348	115	22	3
1874	369		342	373	17	52
1875	560		348	387	11	37
5 years	1,860 ¹²		1,755	14	95	134

the margin to shew difference between quantity of salt as measured at British depôts and delivered to the French. difference on the whole 5.1 per cent., and represents the loss in transit which borne by the British Government. Under the present system, as the salt is weighed at the British depôt after once being weighed into store, the total loss to Government from delivery by a measured garce can never be ascertained, but mixed up with the wastage in the heaps. The heap is treated as if it were measured garce, and the difference between this amount and the measured garce is converted into maunds and shewn as wastage while in store. Figures supplied by the Deputy Collector, the wastage thus calculated despatched in the years 1872-1876 amounted to 8.7 per cent., a high wastage, and we may infer that a part, we cannot say how much, is by measurement. From experiments made, the Deputy Collector is of opinion that the loss from this cause amounts to 12½ per cent. in the case of the heaviest salt, which the French authorities therefore naturally prefer. The lighter salt, and the one experiment made shewed that there was also on the conversion of salt of that kind. How much of the salt on which of 8.7 per cent. is worked out was from Gundalam and how much from Pondicherry is not apparent.

312. We now come to the second part of the question, viz., whether the revenue suffers by smuggling of salt from French territory. The following table shews the average quantity of salt supplied to the several French settlements in the 5 years ending 1874-5, the population of each according to the "Annuaire des établissements français dans l'Inde, 1876," and the consumption per head thence deduced:—

	Salt supplied, (maunds.)	Population.	Consumption per head in lbs.
Pondicherry	43,315	142,458	21.8
Karikal	10,560	91,468	9.49
Mahé	2,616	8,409	25.4
Yanam	792	3,350	11.9

313. The very large rate of consumption in Pondicherry, whether as compared with that deduced for Karikal or even with the highest rates in any part of India, at once strikes the eye. Mr. Bayley, in his memorandum, suggests that the fact of emigrant ships to French colonies drawing their supply from Pondicherry has had the effect of enhancing the apparent consumption, and we have, therefore, examined the possible effects of this disturbing cause. The figures* of emigration to French colonies for the last three years have been obtained, and the quantity† of salt which under the rules must be shipped, ascertained. Even taking the figures for 1874-5 when emigration was largest, the amount of salt thus expended would only amount to 247 maunds. This cause of disturbance may, therefore, be safely discarded. The subject of the excessive deliveries of salt at Pondicherry has more than once attracted attention. In 1863 the Collector of South Arcot seems to have brought it to the notice of the Board that the existence of depôts within French territory influenced home sales in that district, but the Board did not then consider the influence of such depôts to be appreciable. Again in 1864 Mr. Clarke pointed out the disproportionate consumption rate of Pondicherry and accounted for it by saying that the inhabitants of British villages resorted to the French depôts for salt, and the Board seem on this occasion to have admitted the facts. Indeed the danger had by that time become more serious owing to the fact that the French had in the interval built out depôts into the villages surrounding the town of Pondicherry, where alone in 1864 salt had been sold by the authorities.

314. The question how to deal with salt-smuggling could not, it was obvious, be disconnected from the general question of the land customs arrangements and when, in 1868, Mr. Robinson, (now Sir W. Robinson, K.C.S.I.), as additional member of the Board of Revenue, was deputed to report on the latter question, he did not overlook the particular question of salt.

315. The description of the state of things given by Sir W. Robinson is here extracted:—

"The country immediately around the settlement of Pondicherry consists of a block of exclusively French territory, (without intermixture of English villages), the irregular area of which has a radius varying from 2 to 6 miles. Outside this block is a tract of country which may be termed mixed territory, within which English and French villages are intimately intermingled. The outside circle round the mixed territory may be 8 to 12 miles from Pondicherry as a centre.

	1872-3.	1873-4.	1874-5.
* To Réunion	258	753	1,213
† To the West Indies	1,054	1,322	1,936
† 49 oz. per head to Réunion.			
163 " " " to West Indian colonies.			

"For preventive purposes there is a double cordon of preventive posts (gates), with patrols between, around the whole French territory. The inner cordon is drawn around the block of exclusively French territory; the outer cordon is so placed as to include the whole of the mixed territory. The inner cordon prevents smuggling dutiable goods to and from French territory. The outer cordon prevents smuggling dutiable goods to and from French villages within the mixed territory, as all goods are of course free to and from French villages across the inner cordon.

"It will elucidate matters to describe here the practical working of preventive measures within the mixed territory. Dutiable goods pass to and from French territory into French villages within the mixed territory by French passes locally termed 'French to French,' which of course cannot be challenged by the preventive cordon on the inner line. All dutiable goods for English villages within the mixed territory should pay duty; but practically they enter, as above described, the adjacent French villages, and are then freely distributed amongst the English villages lying within the mixed territory. Nothing can be done to prevent this home consumption there; but, if dutiable goods are attempted to be conveyed beyond the mixed territory, the outer cordon intercepts them; and, *vice versa*, if dutiable goods are attempted to be smuggled from outside into French villages, they are stopped on the frontier. Dutiable articles of agricultural produce grown in English villages within the mixed territory, are registered by the village officers and Pygusts; and the nearest custom-house officer, (to each custom-house officer a certain range of "sayer" villages is assigned), opens an account with each cultivator of dutiable produce, in which he debits him with the duty on the probable out-turn of his crops, and credits him with the duty paid on such portion thereof as he sends into Pondicherry, and writes off any portion which he sends to British territory. This last arrangement is but a poor expedient and very easily defeated by fictitious sales; but the system is of very old standing, and is practically the only one which recommends itself at all.

"The British custom-houses are placed at intervals along the inner cordon only; on this line all customs transactions take place. On the outer cordon there are preventive posts (gates) only, but no custom-houses. Persons attempting to take dutiable articles outward across this cordon, uncovered by a customs certificate, are merely stopped and sent back to the nearest custom-house; persons presenting themselves on the outer cordon with dutiable articles inward are passed on to the customs stations; care being taken that the goods are not deposited in the French villages within the mixed territory through which the route lies.

"When goods bound outwards are passed through a custom-house on the inner line, the owner is furnished with a customs-certificate which is cursorily inspected and compared with the goods when passing the preventive post on the outer cordon, in order to prevent dutiable goods being taken up, after getting the certificate, from French villages in the mixed territory through which the route necessarily lies.* Unless such surveillance were exercised French villages outside the custom-house cordon would become, (indeed some now are), smuggling *entrepôts*, for, as before stated, 'French to French' passes cover these across the customs line."

316. With regard to salt in particular, Sir W. Robinson admitted that it was obvious that British villages both within and beyond the mixed territory were supplying themselves with salt from the French depôts, and that the salt revenue of South Arcot was suffering accordingly. As he writes, "the French trade at our depôts had become a retail trade at rates which undersell the bazaar retail price on the British side, and the convenience was great. Practically, therefore, the local trade of English villages, both within the mixed territory and beyond it, had passed into the hands of the French Administration." Sir W. Robinson thought that such smuggling could not be dealt with by any preventive line, though the amount smuggled in the aggregate was not inconsiderable, but suggested that under the spirit of the convention some attempt should be made to limit the quantity supplied to the French to such amount as might reasonably be supposed sufficient for the domestic use of the subjects of France and of them only. The changes in the general customs arrangements carried out on Sir W. Robinson's report need not be specially noticed; they were not of a very vital kind.

* "The local term applied to villages within the mixed territory to which these fiscal arrangements apply."

"Practically there is little real inconvenience or delay occasioned by this second inspection. The goods are very rarely challenged, and only when obviously inconsistent with the covering pass."

317. The Board passed separate orders on the salt question, on a review not only of Sir W. Robinson's report but of some further papers which it is not necessary now to abstract, and arrived at the conclusion that "although the amount of salt supplied to the French Government was so decidedly in excess of the requirements of the small population of Pondicherry as to lead to a fair inference that the inhabitants of the English villages immediately round the frontier did supply themselves with salt from French territory, still smuggling did not go on to such an extent as to render any very stringent measures to repress it desirable." The Government of Madras took the same view, adding that Sir W. Robinson's proposal that the quantity of salt supplied to the French Government should be reduced, did not commend itself to His Excellency the Governor in Council. Matters stand in much the same position now. We called upon the Collector of South Arcot to furnish us with information on several points, and from his reply the following detailed account is compiled.

318. The customs posts consist of, (1) the *sayer* *chaukis* or stations, six in number, (2) the police outposts or gates, forty-three in number. The salt depôts maintained by the French are eighteen in number, and scattered all over the French territory. The total preventive force consists of 1 Inspector, 11 Head Constables, and 74 Constables. At each *sayer* *chauki* there is a force varying from 1 Head Constable and 3 Constables to 2 Head Constables and 5 Constables. At most of the "gates" there is but one constable, at some there are two. Patrolling is kept up between the gates at uncertain hours, but there are no regular rules on the subject, and the Collector is of opinion that the force is insufficient for the duty expected of it.

319. The facts as to the number of cases of smuggling of salt are contained in (1) a statement for 6 years, forwarded by Mr. Sullivan in 1873, and (2) the statement now supplied by Mr. Garstin. The former only gives the total number of cases detected in each year; the latter shows at what stations they occurred. However, amalgamating the figures in one table, we have the following statement:—

Years.	Number of cases.	Number of persons concerned.	Quantity of salt seized.
1867	19	(Not stated in Mr. Sullivan's table)	131½ Madras measures.
1868	27		171 do.
1869	19		133 do.
1870	22		126½ do.
1871	31		122½ do.
1872	47		189½ do.
1873	33	45	Mr. Garstin's list uses sometimes "measures," sometimes "pounds," sometimes "merks," sometimes "rathels," sometimes the quantity "is unknown."
1874	43	59	
1875	30	83	
of 1876	21	12	

Madras measure of salt as equal to 1½ seers, we find that the average *draband* salt seized in the 163 cases which were detected in the 6 years was about 8 seers. Mr. Garstin, from the "value" of the salt seized, gave a verage quantity for the last 3½ years of 20lbs. There are some doubts about either calculation; but, generally speaking, the quantities of *petty* smuggling by single individuals, not systematic smuggling by *garstin* shows the *sayer* *chaukis* in which the cases occurred. Of the 46 occurred in the Kundamangalam *chauki*, 36 in Tukanampakam, 14 in Mortandi Chevadi, 12 in Kotakupam, 7 in Matalapett. Doubt.

less, however, the salt was seized not at the sayer chankis themselves, but at their limiting out-gates, for, as pointed out by Sir W. Robinson in 1869, there is no check on the circulation of dutiable goods in mixed villages, and indeed the inhabitants of almost any English village within the outer cordon, could supply themselves with salt from some French dépôt without even going near a preventive post.

320. Mr. Garstin forwards a "list of English villages situated between the sayer out-gates and the French frontier" with the population of those entered in the census lists. "There are, however," he observes, a number of small hamlets in this list which are not mentioned in the census list, though their population, it is to be presumed, has been added to that of their respective ayan villages." The total population of such English villages is 35,313 souls.

321. As shewing his own views on the amount of French salt consumed in English villages, the Collector forwarded copy of a letter* lately addressed by him to the Board of Revenue, which embraces the whole question of smuggling between the two territories. From this it appears that the Board has under consideration the establishment of an effective customs cordon. Taking the consumption of the French population at 18 lbs. per head, Mr. Garstin finds that nearly 12,000 maunds of the salt supplied the French Government must pass into English villages, representing a loss to the revenue of Rs. 24,000. The total loss on other articles, Mr. Garstin puts at Rupees 11,000 per annum.

322. In the statement forwarded by Mr. Garstin in his second letter, the prices of salt within Pondicherry territory are said to be Rupees 245-8-0 per garce at the central dépôt, Rupees 250-8-0 per garce at the French village depôts. At the central dépôt, retail sales are made down to a markal of $3\frac{1}{4}$ struck "measures," which is sold for a fanam or 2 annas; in the villages $\frac{1}{4}$ th of a mark $3\frac{1}{4}$ struck "measures" can be bought for a "cash" or 1 pie. The "measure," is, we are informed by the Collector, equivalent to 83 centilitres, or cubic inches. The markal or "maréal" of $3\frac{1}{4}$ measures must therefore contain 180-44 cubic inches, and the French garce which is of 1948 "marécals" must contain 351,497 cubic inches.

323. Now the Board's experiments deduced 116 tolahs as an average weight for 100 cubic inches of salt. But the Merkanam salt is notoriously heavy, and shall be safe in assuming the weight of 100 cubic inches of that salt as at least tolahs. The French garce of Merkanam salt must, therefore, contain 137 maunds. At the central Pondicherry dépôt the price of such salt is the Rupees 1-12-5, and at the interior depôts Rupee 1-13-3 per maund. At the average weight the prices would be Rupee 1-14-7 and Rupee 1-13-5. It may be a question for consideration how far these rates are compatible with the clause of the convention binding the French Government to establish "nearly the same price for salt as that at which it shall be sold by the British Government in the vicinity of Pondicherry." But it would be necessary in the first place to ascertain the weight of salt actually sold as a French garce, for our figures above are assumptions, not the result of observation on the spot.

324. We must now endeavour to estimate the price at which salt is sold at the adjacent villages in English territory. The Collector of South Arcot says that salt is there sold at 9 measures the rupee. If the measure be the South Arcot measure, these prices, (taking salt at the average weight of 116 tolahs per 100 cubic inches), would be equivalent to Rupees 2-7-6 per maund respectively. If the salt sold were of the same weight as the French salt, the rates would be somewhat cheaper. The figures agree f-

* No. 235, dated 25th June 1870.

carriage to village bazaars, with the figures at page 15 of Appendix D of prices* at the head quarters of the surrounding taluks of Tindivanam, Villupuram and Trivadi. The rates at Cuddalore are much lower, but seem open to some doubt. Yet even there they are higher than the rates within French territory.

325. The main question for consideration appears to be whether the smuggling of salt or other goods into the British territory beyond the outer cordon, is such as to call for the strengthening of the preventive force or other more decided measures. While the territories continue so intimately and confusedly mixed together it will be impossible, without the co-operation of the French authorities, to prevent salt or any other article sold in French villages passing into English territory within the outer line. Certainly no mere strengthening of the number of preventive police at existing posts will do it. Should opportunity offer in the course of any negotiations with the French authorities, we would suggest that the facts should be represented to them, and the question of the possibility of restricting the French supply of salt to what will suffice the wants of the French Indian population distinctly raised. The French Government has certainly no treaty right to supply English villages, and may indeed, under the stipulation about preventing contraband trade, perhaps be called on to assist in measures to the contrary. Meantime, unless an exchange of territory can be effected, the present condition of things must be accepted as far as the villages within the line are concerned.

326. What then are the facts with regard to the smuggling of salt past the outer cordon? The total population of French and English villages, within the line appears to be 228,801,† a number which would give an average consumption of a little over 15½ lbs. per head. This, probably, indicates a certain amount of smuggling, for, while the difference in the prices within and without the line would be a sufficient motive, we have some reason to believe that the cases of smuggling actually detected were cases in which an attempt was made to cross the line. What quantity evades the customs, it is difficult to say. Salt being cheap, and not being unreasonable to assume 13½ lbs.‡ as a fair consumption per head within the line. The quantity annually smuggled out would thus be about 3½ lbs., or say 5,450 maunds, representing a loss of revenue of Rupees 10,230 §. To this would have to be added the probable loss from smuggling of other goods; but upon this question it is not within our province to enter.

327. At Karikal and Yanam the consumption per head is not such as to give rise to suspicion, and the Collectors reply to that effect. We omitted till too late to address the Collector at about Mahe, but the loss there cannot well exceed the duty on 800 lbs., or say Rupees 1,000 per annum.

328. On the whole then the case of Pondicherry may be left to be considered with the general question of smuggling across that frontier, while the arrangements at the other three settlements are not such as to call for interference.

329. We proceed to notice the arrangements with Travancore and Cochin. In 1856 the Government of Bombay appear to have raised the question whether it would not be sound policy to remove restrictions on trade with native Indian states and

Average.		Average.	
Rs. A. P.		Rs. A. P.	
* Cuddalore.....	3 2 8	Villupuram.....	2 9 7
Tindivanam.....	2 8 4	Trivadi.....	2 8 5
† French.....	113,488		
English.....	85,313		
Total.....	228,801		

† Mr. Garstin's assumption of 18 lbs. seems to us too high.

‡ At Rs. 2-0-0 makes Rs. 9-1-10 a maund, for Government has been paid at the latter rate for the salt smuggled.

bring them under the system of free interportal trade, which as regards British Indian ports had been established by Act VI, 1848. The Government of India and the Court of Directors agreed that such a measure was in itself desirable, but financial considerations prevented its adoption for a time. Early in 1861 the Government of Madras, again brought the topic forward, proposing to admit the states of Travancore and Cochin to the benefits of free interportal trade. The Government of India remarked that regard must still be had to financial reasons, and that it might be doubted whether the benefit of the measure would be sufficiently great and immediate to justify the abandonment of a considerable amount of revenue during the ensuing twelve months. But it had been suggested that the exclusion of native states from free interportal trade, while it inflicted a serious injury on them, did not really obtain any corresponding advantage for the British Government, nay that the policy became even injurious to the British customs revenue when once the port to port trade had been rendered free and the customs revenue made chiefly to depend on an over-sea commerce, which commerce (so it was said) would to a certainty greatly benefit by untaxed coasting trade with native states. Indeed, a doubt was expressed whether even a temporary loss of revenue would ensue from the adoption of a more liberal policy, the impulse to the general coasting trade and to the long-sea commerce being likely to do more than compensate for any loss of the revenue then derived from the trade with native states. This view of the case was laid before the Government of Madras for consideration.

330. The Government of Madras in reply, after estimating the revenue at stake at Rupees 65,000 a year,* went on to observe that the matter could not be decided on that basis alone. Both British India and the native states in question were exposed to special fiscal dangers under the state of things then existing. Owing to the network of backwaters along the coast and the very peculiar position of the port of British Cochin, smuggling was easy in both directions. For instance, the loss to British revenue from the introduction into Malabar of the lower taxed salt of Cochin was estimated by the Resid in 1860 at 1½ lakhs of rupees a year, while British Cochin became a regular entrepot for contraband trade, as it enjoyed the privileges of free import from or export to British Indian ports, and goods could readily be smuggled into or out of it in evading the export or import duties of the native states; for the British cordon had been abandoned in 1846. For instance, the imports of tobacco alone were valued at 10 to 12 lakhs of rupees at the selling rate of the Travancore monopoly, and a quantity obviously could not be consumed in the small area of British Cochin.

331. The Madras Government then proposed the following arrangements:—

"On the part of the native states they would require—

I. that the produce of British India should be admitted free into them by land or sea. Certain articles which are either the subject of monopolies, or produce so large a revenue that they cannot at present be admitted free without financial danger, being excepted;—excepted articles to be settled from time to time, on the understanding that as the circumstances of the native states safely permit, their number should be gradually reduced until ultimately all British Indian produce shall enter free;—

II. the British rates of duty to be levied by the native states on all foreign produce imported into them, exception being temporarily allowed on particular articles, as provided in the case of British Indian produce;—

III. the same course to be adopted in regard to the produce of the native states when exported therefrom;—

IV. the native states to raise their salt-tax to the same level as that of the Madras Government;—

V. the British tariff valuations to be adopted as a general rule.

* But they seem to have considered only the duty levied at Madras ports on exports from Travancore and Cochin.

"On the part of the British Government, the following would be the concessions:—

I. the admission of Travancore produce, opium, salt, wines and spirits excepted, to the benefits of entry into British Indian ports, free of duty;—

II. the Travancore and Cochin duties on the excepted articles, tobacco and the like, so far as the Government consider them equitable, to be levied at British Cochin, and the proceeds to be shared between the three Governments in such proportions as a commission specially to be named for the purpose may consider just."

332. The probable results of such an arrangement were thus summed up by the Government of Madras:—

"It is impossible to say whether by the simple admission of the produce of these states to the benefits of Act VI of 1848, the loss of revenue thereby entailed would be made up. Trade would of course increase, but the extent of the gain thus indirectly caused to the British Government, cannot be estimated. The plan proposed by Government, however, which in fact involves the ultimate introduction of the British duties and tariffs, cannot fail to be profitable to the native states, as well as to the British Government. The latter will gain by the prevention of smuggling in salt alone more than the revenue it sacrifices, besides the great advantage ultimately secured to trade of an uniform tariff and scale of duties for all India.

If the advantage to the native states be less considerable. The trade of their ports will be as at present to British Cochin, and their valuable monopolies will be protected in circumstances require their protection.

And both the native and British Governments will be gainers in another respect by which the proposed arrangement will give to the smuggling now so prevalent.

3. In June 1863 the Governor-General in Council generally agreed to the policy sketched by the Government of Madras, and Mr. Clarke was deputed to arrange details. The negotiations were somewhat protracted, but in May 1865 the arrangements expressed in the following notification were finally approved and introduced. The notification appeared in the *Gazette* of the 23rd of that month:—

"It is hereby notified, for general information, that the following arrangements have been made between the British Government and the native states of Cochin and Travancore for the removal of fiscal restrictions on trade between British India and those states, and that effect has been given to the same under the sanction of the Government of India.

"No duties will hereafter be levied, whether by the British Government or the Travancore or Cochin states, on goods, being the produce or manufacture of British India, on their import, whether by sea or by land, into the Cochin and Travancore territories, excepting tobacco, opium, and spirits.

"No duty will hereafter be levied by the British Government on goods, the produce or manufacture of the Cochin and Travancore states, on their import into British Indian territory, whether by sea or by land, excepting salt, opium, and spirits.

"Free import will be allowed by the Cochin state into its territories of Travancore produce and manufactures, and *vice versa*, on the same terms and with the same exceptions as those existing with the British Government.

"The Cochin and Travancore states will adopt the British Indian tariff and rates of duty on all foreign goods imported into them, tobacco being excepted on import into Cochin.

"Foreign goods which have already paid duty on import to British India, or to either Cochin or Travancore state, will be allowed to pass free on further transport to any of these territories.

7. "The Cochin state will adopt the British Indian rates of export duty on articles exported to foreign countries, pepper being excepted and charged at 15 Rupees a candy.

8. "The Travancore state will continue for the present to levy export duties not less than those obtaining in British India, but not more than 5 per cent. on all ordinary exports, 10 per cent. on timber, and 15 Rupees a candy on pepper and betel-nut *ad valorem*.

9. "The export duty at the Travancore inland chowkies, viz. those not situated on the backwater, will be confined to principal goods only, which will be notified from time to time.

10. "British Indian goods passing from Coimbatore through Travancore to the Cochin territories or British Cochin will be exempt from export duty in Travancore. The same exemption will extend to Tinnevely cloths passing through Travancore.

11. "Goods passing from one part of the Cochin state through Travancore territory to any other part of the former will be exempt from export duty in Travancore.

12. "The Travancore and Cochin states will adopt the British Indian tariff valuations for exports as well as imports.

13. "The Cochin and Travancore states will adopt the British Indian selling price of salt, the rates at inland depôts being raised so as to place the salt of Cochin, Travancore, and British India on the same footing in the market.

14. "The Cochin and Travancore states will import British Indian salt on the same terms on which it is imported into British Indian ports.

15. "The Travancore state will levy import duty on tobacco at rates not exceeding the following:—

on Coimbatore tobacco	40 Rupees a candy.
" Tinnevely	85 do.
" Do. (Kalamany) ...	120 do.
" Jaffna	120 do."

334. The annual loss of customs revenue to Cochin resulting from arrangements (exclusive of those relating to Indian revenue as regards Cochin; estimated at Rs. 1,10,500; thus

loss on customs collections on trade with British India, Rs. 1,00,
loss on import duty on foreign tobacco..... " 10,

Total... 1,10,

and the actual loss the Government of India agreed to make good up to the payments under this head for ten years ending 1874-5, aggregated Rs. 10, i. e., at the rate of Rs. 1,00,981 per annum. To this sum, in order to ascertain full money cost of the concessions to Cochin, would have to be added, (1) the of export duty on Cochin pepper collected at the British port of that not transferred to the native states under Act III, 1861, (2) the amount of the which would have been leviable on goods imported from or exported to Cochin British Indian ports, had the former been still treated as foreign territory, state also benefited by being enabled to reduce its land customs establishment the value of these several items we have not been able to estimate.

335. In regard to Travancore it was stipulated that Government should as regards Travancore. Rs. 40,000 per annum as compensation for the duties levied on foreign goods landed at British ports and thence re-exported to that state. The money cost to the Government of the concession of free interportal trade to Travancore is not certainly ascertainable. But from a table given in the Travancore Administration Report for the years 1872-73 and 1873-74, we infer that the total tariff on goods exported to British territory by sea or across the eastern border of Travancore which, under the Customs Act then in force, would have paid duty, if from a foreign country, was Rs. 33,42,094 in 1872-73, and Rs. 35,00,514 in 1873-74. The articles being all assessable at 7½ per cent., the revenue foregone was Rs. 2,51,017 in the former, and Rs. 2,51,017 in the latter year. We have purposely excluded exports by backwater as these, coming into British territory through independent Cochin would not even before the convention have paid duty, the land customs post between Malabar and Cochin having been taken up in 1846. Similarly the export duty at 3 per cent. leviable on goods passing by the same routes from British territory into Travancore would have been Rs. 74,017 in 1872-3, and Rs. 41,782 in 1873-4, to which must be added something for the grain so carried, the amount of which is not ascertainable as the weight is not given, and export duty was in that case calculated by the maund. We think we may safely assume that Government has sacrificed at least 3 lakhs of customs duty per annum for the encouragement of Travancore trade.

Whether it has recouped itself as suggested in the letter cited in para. 329 above, is a question beyond the scope of our enquiry, and we have only made the attempt to estimate the revenue foregone in order to shew that a very substantial sacrifice was made in favour of the trade of Travancore and Cochin, and that, should it hereafter be thought desirable to reconsider that part of the convention relating to salt, there will be a fair case for asking that these states, and especially Travancore, should listen to any reasonable proposal. The arrangements in the matter of salt and their working, we must however, examine more closely.

336. When the convention was made, both Travancore and Cochin had monopolies of salt, the selling price in Travancore being Rs. 1-1-0 a maund, and in Cochin 12 Annas. By the convention both states agreed to adopt the British Indian selling price of salt and to raise the rates at inland depôts "so as to place the salt of Cochin, Travancore and British India on the same footing in the market." The Cochin and Travancore states were to import salt from British India on the same terms as those on which it was imported into British Indian ports. The British Indian price was then Rs. 1-8-0 and, nominally at least the selling price of the monopoly salt of Cochin and Travancore has followed the successive enhancements of the rate in British territory.

337. The following table shews the sales in each state for 5 years before the convention and for the years following it down to 1874-75; the sales in the neighbouring British Indian district of Malabar are also entered:—

Period.	Sales of salt in Travancore	Sales of salt in Cochin.	Sales of salt in Malabar.	Total of columns 2, 3 and 4.	REMARKS.
1	2	3	4	5	
1861	Mds. 423,120	Mds. 230,964	Mds. 414,015	Mds. 1,068,099	The year is the Malayalam year in respect to sales in Travancore and Cochin. It begins in the middle of August. In respect to Malabar sales the British India official year is used. This year was one of 11 months only in 1863-67.
62	423,490	217,212	442,118	1,082,810	
63	430,450	242,206	441,684	1,114,340	
64-65	479,662	166,147	432,415	1,127,653	
65-66	477,730	210,970	528,003	1,216,703	
5 years the average on	2,463,862	1,082,529	2,308,263	5,854,654	
Average	492,772	216,506	461,653	1,170,931	
75-66	461,100	21,428	522,907	1,015,435	
67	463,569	88,006	459,184	1,010,760	
68	470,760	91,639	541,988	1,097,987	
69	492,000	93,180	531,702	1,116,901	
70	490,920	90,340	517,763	1,100,991	
71-72	2,378,640	363,621	2,552,523	5,344,784	
72-73	475,728	76,724	516,595	1,069,057	
73-74	467,610	90,674	524,455	1,112,739	
74-75	487,250	89,106	599,657	1,176,013	
75-76	491,160	83,480	574,981	1,149,621	
76-77	490,080	78,050	568,052	1,136,182	
77-78	600,610	71,337	488,880	1,060,827	
78-79	2,474,323	412,647	2,715,525	5,602,495	
79-80	491,904	82,529	540,103	1,114,536	
80-81	485,316	72,627	529,865	1,087,811	

338. The figures in this table are very remarkable. They show that while, notwithstanding the increase of the price under the convention, the Travancore sales have continued steadily to increase, the Cochin sales suddenly dropped from upwards of 200,000 to 34,000, and though they have recovered somewhat since, the

average since the convention has been less than 80,000 maunds, against a previous average of 216,706 maunds. It is true that the proportional increase of the selling price was much greater in Cochin, where the price was in fact doubled at a stroke. But this can hardly account for the great difference, and it may very fairly be concluded that much, if not the greater part, of the diminution in Cochin is due to the loss of a market for that salt in Malabar arising from the equalisation of prices. But it does not appear that the gap thus caused in the supply of Malabar was to anything like its whole extent filled up by British salt. The average of the Malabar sales for the 5 years following the convention does, it is true, exceed the average of the 5 years before by about 55,000 maunds, but some portion of this increase is due to the fact that the railway to Coimbatore was open during the whole of the latter period and the effect of this cause may probably be seen in the figures for the two years before the convention (1863-64 and 1864-65). We do not know with certainty the home consumption of Malabar, nor do we know exactly the variations in the area beyond the district limits supplied from the Malabar salt stores. But it is safe to say that the figures shew little, if any, evidence of such an increase in the consumption of licit salt imported by Government as would even approximately counterbalance the enormous decrease in Cochin sales. And the sales for the three tracts taken together are on the average less, though not to any great extent, since the convention than before it. These results may be partly due to the increase of price, in Cochin from 12 Annas, in Travancore from Rs. 1-1-0, in Malabar from Rs. 1-8-0, to rates ultimately (in 1869) reaching Rs. 2-0-0 per maund; but we think that the development of the manufacture of earth-salt in Malabar has been the chief cause in checking the gradual development which might otherwise have been expected. Probably, moreover, some Travancore salt now passes into Cochin or even into Malabar, and partly fills the void in the former caused by the great falling off of local sales. We shall see below that, from the relative prices at which the salt of the two is sold, it is almost certain that this must be the case. The same cause withstanding the neighbourhood of the British sale depôts of Viziapatti and tanguli, might carry Travancore salt from the four southern depôts of the into the Tinnevely district.

339. We may here briefly state the fiscal results of the alteration in the price of salt to each of the native states concerned. In Cochin the average realisations for 5 years before convention, were Rs. 1,62,528, in the last 6 years have been 1,69,570; we have not figures for the intervening 4 years, but there have been a loss, in the first year of change a very marked one. Probably, Cochin up to date neither lost nor gained much on the whole. Travancore on the other hand has gained enormously, the average revenue from salt for the last 6 years 9,90,430, or more than double the average income* from this source for the preceding the convention.

340. The figures for Cochin and Travancore are also remarkable if we compare the sales with the population. That of Travancore according to the census of 1875, numbered 2,311,000 souls. If all the salt sold in Cochin 605,027 souls. If all the salt sold in Cochin is consumed there, the consumption on the average of the last 10 years would be 17.3 lbs. per head, while on the same at the consumption of Cochin would be 10.8 lbs. per head. If we take the two states together, the rate is 15.9 lbs. per head. On the average consumption of five years these rates came out a little higher, or 17.62 lbs. for Travancore for Cochin, and 16.2 lbs. for the two states together. This high rate of consumption has already attracted the attention of the Government of India, suggestion that a portion of the Travancore salt passed into British India territory has been always repudiated by the Resident and by the Government of Madras. It has been urged that if allowance is made for the export of saltfish

* Rupees 4,81,075

1871-2.....	Cwt.
1872-3.....	67,337
1873-4.....	71,632
	72,398
Total...	211,367
Average...	70,197

balance of salt left for consumption gives a not improbable rate. The allowance for saltfish however cannot lower the rate to any great extent. The quantities exported from Travancore were as shewn in the margin. Thus, on the assumption that each hundred-weight contains 20 lbs. of salt, the quantity of salt represented by the average export of saltfish would be 1,403,940 lbs., and the correction would reduce the Travancore consumption by 6 lb. a head. On the other hand, there are circumstances in the salt administration of Travancore, as described by the Diwan in the annual reports, which make it highly probable that the consumption of licit duty-paid salt by no means represents the whole consumption of the country.

341. In para. 363 of his last published report, the Diwan writes, "as in British India, the salt department is prolific of abuses, which, at one time, have been gradually reduced considerably. The system of receiving and selling salt by measure still continues, and the facilities for over, as well as under, measurement which it affords are unfortunately too well appreciated and availed of by a very low paid and unscrupulous agency, to the injury of the public and Sirkar revenue." That speculation exists in Travancore is no matter for wonder when the system of management pursued, and the scale of pay of salt establishments are considered. There are four salt-works in Travancore, turning out on an average about 2½ lakhs of maunds a year. This salt is not measured and taken into store as made, but is buried in pits at the panside, and allowed (so it is said in the administration report) "to season somewhat," being taken into store as wanted and then and there only paid for. Payment is sometimes delayed for several years. The manufacturers receive 1 anna 10 pies a maund. The manufacture is superintended by an officer styled sheristadar, (this appointment has only recently been created), who receives Rupees 125 a month. Each salt-work has its own establishment consisting of 1 Superintendent on Rupees 5½ a month. | 2 Measurers on Rupees 3 each. 1 Accountant " 4½ " | Peons..... " 4½ " There are 27 peons in all to guard the whole of the pans and the stores at the pans, and the total annual cost of the whole establishment (consisting of 43 persons) exclusive of the sheristadar is but Rupees 2,302.

342. There are eight principal store-houses* at which salt is received from the stores at the pans, and on importation by sea from Bombay and elsewhere. The salt is measured (now weighed) here before being taken into store. The establishment at each principal store-house consists of—

1 Superintendent, whose pay varies from Rupees 3½ to Rupees 14	
1 Accountant	6½
2 or 3 Measurers	3 to 4½
Peons	3½ to 5

These establishments consist of 47 persons, whose pay aggregates Rupees 2,800 a year.

343. From the store-houses the salt is issued to 34 selling depôts, distributed over the territory. The establishments in charge of the selling depôts are as follows:—

1 Superintendent, pay from Rupees 12 to 25.	1 Cash-keeper, pay from Rupees 7 to 10.
1 Accountant..... " " " 7 to 10.	Measurers... " " " 4½ to 5.

Three inspectors on Rupees 25, 17 and 6, respectively, watch and check transactions at the selling depôts. The total strength of establishment, including inspectors, at the 34 selling depôts is 188 persons, whose aggregate pay amounts to Rupees 16,895 a year. With a large, underpaid, and scattered establishment such as that just des-

* The salt from the pans is carried to some of these store-houses by sea.
† Sic in the Report. Perhaps a mistake for "13."

cribed, with salt lying at the pans unmeasured even for years together, with only 27 peons to watch 4 separate sets of pans of extent sufficient to produce 2½ lacs of maunds a year, and the stores at the pans besides, with manufacturers unpaid sometimes for years, and with salt stored and delivered by measure, the loss of salt by theft and peculation from both pans and stores must be something considerable. The addition of the salt thus illicitly passing into consumption in Travancore to the licit sales makes it the more difficult to believe that the whole quantity of salt sold at the Travancore stores can be consumed by the Travancore population.

344. Salt is received and sold by weight in Cochin, but in Travancore, till within the last few months, while Bombay salt was weighed in on importation, home-made salt was received into store by measurement and both kinds of salt were sold by measure, the measure used being the "para" or "phara" of the capacity of 838 cubic inches, $3\frac{1}{5}$ such measures being taken to represent a maund. The measured maund would thus contain 2,556 cubic inches. We have not very certain data as to the weight for bulk of Bombay salt, indeed none as to the particular salt exported thence to Travancore. But, according to Dr. Ratton, a measured maund of the Bombay salt imported into Malabar, which, we believe, is the same class of salt as exported to Travancore, contains only 2,043 cubic inches, while, according to the Board's experiments with the same salt, the cubic contents of a maund weight were 2,269 cubic inches. If the former of these conversions be correct, inasmuch as about half the salt consumed in Travancore is Bombay salt, the addition to the licit consumption would amount to 136 lb. per head, while if we take the Board's rate of conversion, the addition would be 97 lb. per head. We have no data as to the weight of a given quantity of the indigenous salt, and are therefore unable to say whether the calculation as to the amount of that salt consumed should be similarly modified.

345. But this question of weight is of importance in another aspect, as lowering the price, at any rate of the Bombay salt, sold at the Travancore depôts. The map of the Travancore and Cochin country which accompanies this report shews the salt depôts of both states, and the Statement No. 14, in Appendix C, shews the sales at each depôt in each of the Malayalam years 1873-4 and 1874-5. Till the 12th March 1875 salt was sold for Rs. 2-0-0 the measured maund at all the Travancore depôts except Shencotta (No. 11), where it was sold at Rs. 2-4-0 for the same quantity. The prices have now been raised to Rs. 2-2-0, and Rs. 2-5-0, to correspond to the present rates for Malabar imported and South Canara indigenous salt, and the result is that at Shencotta the rate is *below* the coast rate for Bombay salt. The entire arrangement appears to violate the convention, which implied that the actual cost of carriage should be added in the case of inland depôts. If the nominal prices be corrected by reduction of measure to weight, the true rates by weight for Bombay salt would be, (the nominal rate being taken at Rs. 2-0-0), Rs. 1-9-6 according to one conversion, or Rs. 1-12-5 according to the other. Thus the inland depôts the Bombay salt sold would have, so to speak, a start of Rs. 0-6-6 on one theory, or Rs. 0-3-7 on the other and, where difficulties of transit did not interfere, this difference might carry it into British territory. In like manner, if the Cochin sales have been made by correct weightment, the difference in favour of Travancore measured sales might, especially with cheap conveyance available by backwater, carry much Travancore salt into Cochin.

346. On the above grounds we think that the high rate of consumption in Travancore is such as might well suggest further enquiry whether all the salt sold is really consumed in that state, and if not, where the surplus goes to. Should it be found that any appreciable amount passes into British territory, we think that the circumstances of the convention are such as would warrant an endeavour to arrange with Travancore that the prices charged should be so adjusted as to restrict the consumption to subjects of that state.

347. One more point remains to be noticed. To cover wastage on the voyage as well as discrepancies arising out of the use of different measures in Bombay and on the coast, the levy of duty was at one time remitted on deficiencies in shipments from Bombay not exceeding 10 per cent. This allowance was made in the case of all shipments, whether to British or foreign ports, but it was found to open a door to fraud, and it was first reduced to 5 per cent., and finally, with the consent of the Madras Government in respect to Malabar and Canara, entirely abolished from 1st July 1865. The Governments of Cochin and Travancore, however, urged that wastage was thrown on them by their contractors, and, within the limit of 10 per cent., the sums shewn in the margin have been paid yearly to each state on this account. We think that

Compensation for wastage and reduction of duty at Bombay.

Years.	Travancore.	Cochin.	Total.
	RS.	RS.	RS.
1866-67	8,839	912	9,751
1867-68	26,933	5,135	32,068
1868-69	42,750	13,447	56,197
1869-70	31,854	7,935	39,789
1870-71	27,645	12,276	39,921
1871-72	33,567	14,821	48,388
1872-73	46,290	14,743	61,033
1873-74	52,329	14,409	66,738
1874-75	14,063*	14,553	28,616
Total.	2,59,354	93,298	3,52,652

these amounts must be noticed as a charge against salt revenue in the same way as the subsidy to the French. But the wastage allowance is, in our opinion, altogether excessive, and is a mere encouragement to fraud and smuggling. Probably 2 per cent. would be a reasonable allowance on this score, if any allowance be thought necessary. Under the bagging system, the wastage has been much reduced. The remission, under the convention, of 9 pies out of the 1 anna per maund duty which Bombay salt exported to Travancore had previously paid must also be treated as a charge against salt revenue. The point will be noticed in the Chapter on cost.

CHAPTER IV.—COMPOSITION AND QUALITY.

348. The first question specially referred to us by the Government of India is as follows:—

The questions as to composition and quality referred to Commission.

"What is the quality and composition of the salt (a) produced at the various works and sold by the Government wholesale, and (b) by the dealers retail in different parts of the Presidency?" We have marked by the letters (a) and (b) the two distinct interrogatories here involved.

349. The steps taken by us to obtain materials for the analyses which it was necessary to set on foot in order to answer the twofold question, are described in paras. 3—6 of our circular to Collectors of the 28th January 1876, (see page i. of Appendix A). In compliance with the call therein made, local officers forwarded to us 638 specimens of salt. Of these, 172 were specimens, (classified as best, average, and worst), from the platforms of the several salt divisions†, 24 were samples from the Government stores of imported salt on the west coast, 373 were bazaar specimens of sea-salt, and 69 were specimens of earth-salt from inland markets, and with two exceptions came from the Ceded Districts.

350. Had time permitted, it was our intention to have had a complete quantitative analysis made of a specimen of salt from each division; but finding that this would take too long, we made a selection of the most important works, and 41 of the specimens, representing 31 divisions, have been fully analysed. A specimen of salt from Porto Novo, one of spontaneous salt from Vedaranyam, four samples of salt from the Government stores on the west coast, and nine of earth-salt from the Ceded Districts, have also been subjected to complete analysis.

351. From the large number of salts obtained from the bazaars, a selection was made of three from each district—in a few cases this number was exceeded—and sixty-seven of these speci-

* Further claims on account of this year are under investigation.

† From 3 divisions no specimens were received.

mens were subjected to an incomplete analysis, the result desired being to ascertain roughly the purity or otherwise of the salt as it entered into consumption.

352. In Appendix A, part II will be found, in detail, the results of each analysis, and a report by Dr. Hazlett, who was specially deputed as analyst to the Commission, in which he explains the methods he employed, and his reasons for preferring these to others that he might have adopted. In addition to the chemical analysis, brief remarks have been entered in the table of bazaar salts for each district, shewing the source of production and describing the general appearance of the salts received, while in the table for platform salts columns have been added to shew the physical qualities of the crystals both of the specimens analysed and of some received, but not analysed. A separate column also indicates the nature of the brine supply: i. e. whether derived from the sea direct, a tidal river, a back-water or from brine-pits.

353. It may here be well to explain the sense in which the terms used in describing the physical qualities of the crystals have been applied, and at the same time to summarize the results obtained by this examination.

Regularity.—This term does not apply to the single crystal, which in its perfect form must be a cube, but to the general mass of agglomerated crystals in each specimen examined. In some cases the mass examined shewed perfect crystallisation on the top surface or on the sides, in other cases the greater proportion of the crystals exhibited very imperfect crystallisation. Out of the sixty specimens examined, twenty-two were regular, twenty-one irregular, and seventeen very irregular.

Size.—This is given in parts of an inch and represents the length of the side of the agglomeration of crystals examined. Eight of the specimens averaged '1', twenty-nine '2', fourteen '3', six '4', one '5' and one '6'. Forty-nine of the sixty specimens possessed crystals with sides from '2' to '3', and as a rule much small-grained salt was intermixed.

Translucency.—All the crystals examined were opaque.

Colour.—In colour the crystals varied from pure white, through shades of dirty white, red, and brown. Half of the specimens were white, while half showed the above-mentioned colours, in various degrees. These shades of colour are due to minute particles of earth or sand, held in suspension in the brine, becoming incorporated in the interstices of the crystals during formation.

Solidity of form.—This term is used with regard to the external appearance of the crystal and not with regard to its internal structure. Crystals with hollows in the top give, as a rule, greater bulk for weight than those which appear to be solid. Of the specimens examined, seventeen were solid, twenty-three slightly hollow, fifteen hollow, three very hollow, and two extremely hollow. This shows forty-three with degrees of hollowness, against seventeen solid.

Cohesion.—This property was tested by pressure of a number of individual crystals between the finger and thumb, or by trituration of a handful of crystals in the hand closed. Three of the specimens were considered very good, two good, twelve fair, thirty-two were easily broken, and eleven very easily broken. This gives forty-three of the salts as very friable, against seventeen with fair cohesive power.

Moisture.—This term refers to the external, and not the interstitial moisture present with the salt. The commercial test generally adopted for estimating the presence of moisture, is to press a handful of salt in the hand and triturate it; on allowing the salt to fall from the hand the proportion which adheres shows the degree of moisture. By this rough test the specimens gave five dry, fourteen slightly moist, ten moist, thirty very moist, and one excessively moist.

Weight.—The weight per cubic foot in ounces was obtained by pouring the salts very lightly into a measure containing nine cubic inches. The results in ounces may not be accurate with regard to the actual weight of a cubic foot, but for comparison of bulk to weight they may be accepted as relatively correct. The lightest salt is from Harnad in South Canara; it weighs 608 oz. or 461 of a maund per cubic foot. The heaviest is from Adrampatam in Tanjore, it weighs 832 oz. or 632 of a maund per cubic foot.

Impurities visible.—In fifty-two of the specimens no impurities were apparent, and in eight the crystals had very fine grains of silica or alumina adhering to them. In none of the specimens could the presence of foreign salts be detected on the salt crystals.

354. It will be seen that there is considerable variety in every respect among the salts of Madras manufacture analysed. For instance, the percentage of moisture varied from 3.036 in the specimen of Tuticorin salt obtained from the Beypore stores, to 14.484 in the Penuguduru (Godavery) specimen; the Neidavasal salt contained 6.401 per cent. of insoluble inorganic matter, while the salt from Karasa contained only .335 per cent.; the organic impurity discovered varied from a trace in the best Vayalur specimen to .541 per cent. in the Negapatam sample; the percentage of magnesium chloride was only .472 in the sample of Tuticorin salt stored at Beypore and nearly ten times that amount (.4502) in the specimen from Coilpatam; calcium chloride was not found at all in 27 of the complete analyses, varying in the cases where it was found from .041 to 1.403 per cent.; magnesium sulphate was more generally present, the quantity, where found, varying from .074 to 1.165 per cent.; while the calcium sulphate varied from a percentage of .119 to one of 2.618. The percentage of chloride of sodium reaches 94.187 in the specimen of Tuticorin salt from Beypore, and falls to 74.635 in the sample from Neidavasal. In salts from the same district, and even from the same division, the differences are often very marked. It is, however, unsafe to build on a single analysis of any salt, and the Tuticorin salt from the Beypore dépôt is probably an instance of this uncertainty. A sample sent may not be really representative, or it may not be homogeneous, and the portion selected for analysis may therefore not fairly represent the sample. In respect of moisture, especially, much depends on the date of the analysis and the hygrometrical state of the air at the time.

355. Even in the following table in which we have given the average composition according to analysis of the specimens of indigenous salts obtained from each of the east coast districts, and from South Canara, the number of specimens from one district is in most cases too small to afford sound data, though on the whole the average may, perhaps, fairly represent an ordinary salt of Madras manufacture:—

Districts.	Number of specimens analysed.	Moisture.	Insoluble matter.		Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.	Unaccounted for.
			Inorganic.	Organic.						
Ganjam.....	2	9.237	.891	.101	85.340	2.344	.190	.313	1.205	+ .023
Vinayapatnam.....	2	9.921	.345	.040	86.373	2.334	...	.199	.932	+ .137
Godavery.....	1	14.484	.978	.176	79.307	3.765	.332	...	1.338	+ .340
Kistna.....	2	7.948	2.391	.196	86.495	1.329	.031	.622	1.130	+ .123
Nellore.....	4	10.812	1.039	.169	84.847	2.011	.232	.284	.964	+ .410
Chinglepat.....	16	8.435	1.860	.158	85.599	2.138	.016	.537	1.134	+ .009
South Arcot.....	1	10.859	1.473	.123	81.125	3.237	.735	...	2.398	+ .059
Tanjore.....	6	11.238	3.165	.235	80.856	2.618	.151	.319	1.605	+ .246
Madara.....	2	6.674	.772	.072	89.265	1.519	.775	...	1.190	+ .298
Madara.....	4	9.363	.735	.064	85.932	2.651	.192	.447	1.366	+ .309
Tirunelveli.....	1	8.100	3.833	.234	87.506	.898	1.403	...	2.215	— .351
South Canara.....	1	8.100	3.833	.234	87.506	.898	1.403	...	2.215	— .351
Average.....	41	9.281	1.730	.156	84.839	2.233	.185	.399	1.315	+ .138
Average of three specimens of salts from the Malabar depôts.....	3	7.736	1.225	.235	85.931	2.772	.183	.048	2.544	+ .251

356. It will be seen that we have added at foot of the table the average of the three specimens of Bombay salt from the Chowghat, Ponani, and Calicut stores in Malabar which have been subjected to analysis. The following brief table compares in a more compendious way the average salt of Madras manufacture with that imported from Bombay as represented by the three specimens analysed:—

Brief comparison of composition of three specimens of imported salt with that of average East-Coast salt.

	Sodium chloride.	Moisture.	Insoluble inorganic matter.	Insoluble organic matter.	Magnesium chloride.	Other foreign salts.	Unaccounted for.
Average salt of Madras manufacture	84.839	9.281	1.730	.156	2.233	1.190	+1.198
Average of three specimens of Bombay salt imported.....	85.931	7.336	1.225	.265	2.712	2.781	+2.51

357. It thus appears that, so far as these figures prove anything, the average Madras salt does not differ much from that imported from Bombay. We, however, wish to point out that the Bombay salt brought into Malabar under the monopoly is not to be taken as representative of Bombay salt generally. The inferior kinds are purchased for export to Malabar and Calcutta, and in our report on the West Coast supply we have expressed a hope that the throwing open of the trade there would tend to introduce the better classes of Bombay salt. The specimen obtained for the Commission from Ghorebunder is a distinctly better salt. The abstract given in the margin of a return of prices obtained from the Collector of Customs, Calcutta, shews that the Bombay and Madras salts severally exported thither, cover much the same range of prices, sometimes one and

sometimes the other standing higher in the market. We learn, however, from Mr. Barter, a merchant of Tuticorin, that the salt there made is unsaleable in Calcutta, Penang and Rangoon, except at prices from 20 to 30 per cent. lower than those quoted for other Madras salt.

358. The following table compares the average Madras salt as obtained from the 41 analyses of platform specimens and certain other salts obtained by solar evaporation:—

Comparison of average Madras salt with other salts obtained by solar evaporation.

	Moisture.	Insoluble matter.		Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.	Remarks.
		Inorganic.	Organic.						
INDIAN.									
Cutch	3.38	3.36		90.35	.30		.35	1.73	Analysed by the Acting Chemical Examiner for Dr. Ratton, 1873
Bombay	8.11	4.32		83.52	.89		.55	2.33	
Goa	10.80	2.92		81.35	1.46		.81	2.16	
Canara	8.60	4.52		83.25	1.37		.73	1.52	
Average of 3 specimens of Ennore salt from the Madras kotaur	5.21	1.03		86.67	1.83		.235	.71	Analysed by Dr. Hazlett for the Salt Commission, 1876.
Mixed Chilka lake salt, 8 specimens	7.457	2.791	.032	86.148	2.044		.045	1.445	
Bombay salt obtained by the Salt Commission from Ghorebunder salt works	3.655	2.792	.059	91.086	.615		.092	.680	
Tuticorin salt from the Beypore depôt	3.036	1.085	.031	94.187	.472		1.160	.138	
PORTUGUESE.									
St. Ubes	1.95	.10		96.50	.32		.25	.85	From Chemical Technology, &c., by Richardson and Watts, published 1863.
1st sort	2.45			85.19			1.69	.56	
2nd do.	3.60	.20		89.19			6.20	.81	
3rd do.	8.36	.30		89.09			7.27	3.57	
Average of the 3 specimens of Bombay salt from the Malabar depôts	7.836	1.524	.255	85.931	2.773	.129	.048	2.544	Analysed by Dr. Hazlett for the Salt Commission, 1876.
Average of 41 specimens of salt from Madras works	9.281	1.730	.156	84.839	2.233	.185	.395	1.315	

* Obtained from one of the Madras West Coast depôts.

The chief points of difference between the Madras sea-salts now under review and those shewn in the above table consist in the Madras salts containing an excess of moisture, and of magnesium chloride; and to the *deliquescent* properties of this salt much of the excess moisture may be attributed.

359. In estimating the actual impurities of a salt, it is, however, well to exclude the moisture, though the proportion of water present, of course, materially affects its commercial value. We have, therefore, prepared the following table in which the average Madras salt is compared with the salts already given above, and with certain others, the moisture being excluded, and the percentages redistributed on the supposition of complete dryness:

	Insoluble matter.	Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.	Peroxide of iron.	Unaccounted for.	
Sea Salts—									
Portuguese—									
St. Ubes	.162	98.420	.326		.255	.897			From 'Chemical Technology,' by Richardson and Watts.
1st sort		97.583			1.733	.574		—1.110	
2nd sort	.208	92.621			6.431	.840			
3rd sort	.218	87.437			7.937	3.898		—5.10	
French, Marennes—									
White	.700	97.200	.400		.500	1.200			Analysed by Chemical Examiner, Government of Madras, from Dr. Ratton, in 1873.
Yellow	1.200	96.700	.230		.660	1.210			
Red	.850	96.780	.680		.630	1.090			
Green	1.570	96.270	.270	not given.	.800	1.090			
Indian—									
Cutch	3.430	94.093	.208		.336	1.802			Analysed by Dr. Hazlett for Salt Commission in 1876.
Bombay	4.702	90.891	.892		.225	2.590			
Goa	3.273	91.760	1.637		.908	2.422			
Canara	4.945	91.091	1.499		.799	1.663			
Average of 3 specimens from the Madras kotaur	1.086	93.755	1.931		2.478	.749			Analysed by Dr. Hazlett for Salt Commission in 1876.
Mixed Chilka Lake salt, eight specimens	3.114	93.002	2.205		.643	1.560			
Bombay salt from the Ghorebunder works	2.873	94.774	.640		.036	.707			
Tuticorin salt from the Beypore depôt	1.213	97.131	.494		1.217	.144			
Lake and brine-well salts of Northern India—									
Pachbadra	.680	95.690	1.520	1.570		.140		—4.00	Analysed by Mr. Glynn, Inland Customs Department.
Sambhar	1.200	94.450	trace	.390		3.120	.200	—6.40	
Sultanpur	.680	94.000		2.040		3.090	.780	—4.590	
Bhartpur	.840	92.210	2.240		3.040	1.310	.160	—2.00	
Salamba	.440	92.120	1.720	3.720	2.360	.210		+7.70	Analysed by Dr. Hazlett in 1876.
Rock salt—									
Punjab No. 1	trace	99.45	.32	.92		.28		+9.97	
Do. No. 2	.12	92.91	1.76		2.64	2.51		+6.04	
Liverpool	.64	98.58			.62	1.18		+4.42	Analysed by Dr. Hazlett in 1876.
Average of 3 specimens of Bombay salt from the West coast	*1.597	92.715	2.990	.155	.052	2.745		+1.38	
Average of 41 specimens of Madras salts	*2.079	93.503	2.461	.205	.439	1.449		+2.51	

360. This table again shews that while the percentage of chloride of sodium on the total solid components of Madras average salt is not very low (93.505) the great defect is the presence of an undue proportion of magnesium chloride. This indicates the chief errors in manufacture, viz., hasty evaporation of shallow irrigations beyond the point where sodium chloride is alone precipitated, and carelessness in permitting the bitters to remain and mix with successive irrigations of fresh brine, thus increasing the percentage of foreign salts present. To the shallow irrigations which are part of the present method are also mainly attributable the want of regularity, solidity of form and cohesion, and the small size of the crystals described above. The same measures which will produce a chemically purer salt, will also tend to improve its physical qualities.

* In this column the organic matter has been added to the insoluble inorganic matter for purposes of comparison with the other salts, in the analyses of some of which it was not separately shewn.

361. The insoluble inorganic matter is chiefly due to the substance of the beds being scraped up with the salt. Unless the beds are lime-lined or made of tenacious clay a certain amount of impurity must always be collected in this way. The great variation apparent in the amount of insoluble inorganic matter are due partly to differences in the soil of the beds, partly to careless scraping. The average Madras salt does not, however, in this respect compare unfavourably with other Indian salts obtained by solar evaporation of sea-water.

362. The organic matter present averages 156 per cent. There are but few other analyses with which to make comparison on this point, but with such as there are, except the average of the three specimens of imported West Coast salt, the Madras salt compares unfavourably. Probably the nature of the organic matter is of more importance than its quantity, and on the former point we have no positive evidence. Dr. Hazlett does not place any reliance on the results of the nesslerisation of the five specimens subjected to that process, but states his opinion that the organic matter arises from the presence of a confervoid growth generally found in the salt pans. The specimen of salt from Negapatam shews the largest percentage of organic matter, and we have already cited Dr. Ratton's description of the brine-supply at that place as much infested with minuter vegetable forms. Dr. Ratton himself, however, in his letter to Board of Revenue, No. 64, dated 15th September 1875, accounts for such traces of organic matter as are found in the salt rather by leaves blown into the salt pans and bits of the thatch covering getting mixed with the salt. The latter cause does not exist at Negapatam where earth coverings are used. In any case there is reason to believe that all known forms of vegetable life are decomposed in the process of evaporation of the brine, and that such organic matter of this kind as is found in the salt is dead. The fact that the bazaar specimens yield a larger percentage of organic matter tends to shew that this form of impurity consists of leaves and the like which get mixed with the salt in its subsequent stages, rather than of anything which it carries with it in its first precipitation in the pans.

363. The chemical impurities other than magnesium chloride are calcium chloride, calcium sulphate, and magnesium sulphate. These on the average aggregate 1·899 out of 100 parts. They, of course, displace so much sodium chloride, but, neither in a commercial nor a sanitary point of view, do they form a very important drawback on the usefulness of the salt. The lime salts are harmless and the same may probably be said of the sulphate of magnesium in the proportions in which it occurs.

364. Before endeavouring to sum up the above into an answer to the first part of the question put by the Government of India, it may be well, for several reasons, to shew separately the average results of the fifteen analyses of salts from the northern pans of Chingleput. The brine-supply of all these pans is the same, viz., the Ennore backwater, the method of manufacture is approximately uniform, the analyses are sufficiently numerous to form a safer basis for argument than elsewhere, the quantity of salt manufactured at these pans is one-fifth of the whole produce of the East Coast, and, finally, the strictures of Mr. Falk upon Madras salt generally appear to be mainly based on an examination of salt yielded by these particular works. The salts analysed were made in the year 1875 when the season was particularly favourable, the Ennore bar well open and the water in the canal daily renewed by the tide. In the present year, that bar has been for a considerable period closed, and in other years difficulty is sometimes experienced in keeping it open. But the manufacture does not depend on the Ennore bar alone, that of Pulicat also supplying brine to a considerable part of the works, and, in ordinary years, there is free communication between the canal and the sea through both bars, and the inflow of fresh brine is sufficiently frequent.

365. The average composition of the fifteen specimens from the several Ennore works is shewn in the following table, and we have put below it the average of the forty-one specimens from all pans :—

	Moisture.	Insoluble matter.		Sodium Chloride.	Magnesium Chloride.	Calcium Chloride.	Magnesium Sulphate.	Calcium Sulphate.	Unaccounted for.
		Inorganic.	Organic.						
15 specimens from Ennore (average)	3·531	1·884	·135	85·752	2·125	·017	·593	1·183	+ ·020
41 do. from all pans (do.)	3·281	1·730	·136	84·839	2·253	·155	·399	1·315	+ ·138

It will be seen that the former average is at each point, except in the quantity of inorganic insoluble matter and of magnesium sulphate, slightly, but only slightly, superior to the average struck on all the platform specimens analysed.

366. Our conclusions as to the composition and quality of the salt sold at the Government stores may be thus summed up. The salt varies greatly in almost all respects. In composition, such a salt as that from Sivandakolam, (of which the analysis is given in Appendix A), must be called a fair salt, though it would be better for having still less magnesium chloride; the crystals are, however, very small and the salt is friable and moist to the feel, though the analysis only shews 4·794 per cent. of water. The sample from Neidavasal* on the other hand must be condemned on every count. It consists to the extent of one-eighth of moisture, it is very dirty, holds more than 3·5 per cent. of magnesium chloride, and is small in crystal and wanting in cohesion. But to take the East Coast salt on an average, we find it contains nearly 85 per cent. of chloride of sodium, and is in that as in other respects inferior to the specimen of Bombay salt obtained from Ghorebunder, but superior to the sample of Bombay salt from West Coast depôts analysed for Dr. Ratton, and only 1·1 per cent. inferior to the average of the samples of imported Bombay salt now analysed. It is undoubtedly in this respect far inferior to such salts as Liverpool salt or Punjab rock salt, though we have not analyses of these including moisture. The purchaser of a hundred maunds of average Madras salt gets only, say, 85 maunds of chloride of sodium; of the remainder, 9·281 maunds are water. This is certainly an excessive proportion and detracts from the commercial value of the salt. The defect is intimately connected with the presence of the large percentage (2·253) of chloride of magnesium and its affinity for moisture. This constitutes a marked fault in the Madras salt. The other chemical impurities do not amount to 2 per cent. and, though they are not, we believe, noxious in the quantities in which they occur, they are impurities, and *pro tanto* diminish the commercial value of the salt. The same may be said of the insoluble inorganic matter, and probably of the organic matter present, but on this latter point we cannot speak positively. The quantity of inorganic matter varies within very wide limits and might be reduced by more careful scraping. The defects in physical qualities follow more or less from those in chemical composition. The small size and want of cohesion of the crystals are grave drawbacks to the commercial value of the salt, but may be remedied by improved manufacture. In point of cohesion the Bombay salt imported into Malabar is strikingly superior.

367. Though the average Madras salt is, we think, capable of improvement in the respects now indicated, we desire to state our opinion that the picture of it drawn by Mr. Falk is, except in two points, altogether exaggerated. That gentleman's

(The picture of Madras salt drawn by Mr. Falk, exaggerated.)

* See again Appendix A. + 84·839.

assertions on the subject, as contained in his "notes" and "memorial", are as follow:—

in his "notes":—(a) "The sea-water" (in the northern Chingleput pans) "contains, as it has to be drawn through the canal which also takes the drainage of the adjacent district, considerable organic matter, besides some two to three per cent. of very injurious bittern salts;"—

(b) "The product is a most inferior, dirty, ill-crystallised salt, containing fully 30 per cent. of water, sand and other deleterious ingredients; among the latter must be specially named from 2 to 3 per cent. of chloride of magnesium and other bittern salts, which affect the mucous membrane and the skin most seriously, and must cause a considerable amount of suffering. The organic matter which becomes an ingredient of the salt, must also, in times of cholera and other epidemics, widely spread the contagion. The deliquescent nature of the bittern salts also accounts for the enormous wastage which is complained of in the salts, and is said to be 25 per cent., inasmuch as the moisture of the atmosphere is absorbed to such an extent that the salt when exposed becomes completely drenched and wastes immensely, even whilst in the hands of the consumer;"—

in his "memorial":—"The topographical condition of the sea-shore is such that the sea-water employed must be conducted through canals into reservoirs, which accumulate from the natural drainage of the adjacent country an amount of organic matter which enters the product of salt, that adds most materially to the other deleterious ingredients of the water. * * * The result is a product unfit for human consumption. The organic particles aforementioned must spread in times of disease contagion widely through the land. The bittern salts present to an unparalleled degree must cause skin diseases and irritations of the mucous membrane, and in addition to these positively injurious qualities the deliquescent nature of these Epsom and Glauber salts causes an attraction of moisture from the atmosphere which reduces the chlorine value of the salt to the purchaser most seriously," 30 per cent. according to Mr. Falk.

368. The assertion that the sea-water whence the Ennore works derive their supply contains 2 to 3 per cent. of bittern salts (*i.e.*, salts other than chloride of sodium) is refuted by analysis. In the second extract, the Ennore salt is said to contain 30 per cent. of foreign matter. This would leave only 70 per cent. of sodium chloride. But the analyses we have had made shew in the worst Ennore salt at least 80·223 per cent. of chloride of sodium, and on the average 85·752 per cent. The worst salt from any quarter only contains 25·365 per cent. of foreign matter of all kinds. The Ennore salt is not perfectly clean, but the percentage of insoluble inorganic matter is not very important. The crystals, as we have already stated, are not as large or hard as they might be, and the salt does contain upwards of two per cent. of magnesium chloride, but the extent of wastage arising from the deliquescent nature of this salt is altogether overstated by Mr. Falk. Dr. Ratton has shewn how utterly Mr. Falk has misunderstood him on this point. With regard to organic matter, a certain percentage is found in the Ennore salt, but there is nothing to show that it is in a state likely to be productive of disease. It would be absurd for us to argue on the means by which cholera and other diseases are spread, but we have not seen any reason to believe that salt plays a special part in propagating epidemics. Indeed, if cholera is propagated by the medium of water, the generally unsatisfactory state of the supply of drinking water would sufficiently account for the phenomena, without having recourse to the indirect agency of polluted salt.

369. One point remains for us to notice before we proceed to answer the second part of the question put by Government. Dr. Ratton, (see page 27 of his second report), has cited an analysis of pit brine from Negapatam, which exhibits a

Effect of source of brine supply on composition.

larger proportion of other salts to sodium chloride than is contained in sea-water. We have therefore in the following tables grouped the analyses of the 41 platform specimens according to the source of brine supply, and shewn the composition of the average salt of each group. The statement in Appendix A shews the source of brine supply for each division.

Source of brine supply.	Number of specimens analysed.	Water.	Insoluble matter.		Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.	Total impurities other than water.	Total of all impurities.
			Inorganic.	Organic.							
I.—Sea-water brine.....	9	8·575	1·364	·122	86·137	2·005	·428	·414	1·610	5·955	14·636
II.—Pit brine.....	9	10·561	2·072	·229	84·337	2·390	·225	·198	1·553	7·977	17·605
III.—Sea-water and pit brine.....	3	17·049	3·500	·003	83·984	2·919	...	·326	1·074	5·461	16·510
IV.—Backwater brine.....	19	8·616	1·746	·133	85·544	2·150	·034	·002	1·216	5·900	11·515
V.—Backwater and pit brine.....	1	10·811	1·497	·021	83·168	2·234	...	·181	1·366	5·859	16·670
All sources.....	41	9·281	1·730	·156	84·332	2·233	·145	·309	1·315	6·918	15·299

370. The percentage of moisture is lowest in the salt from backwater brine, but no definite conclusion can be based on this result. The specimens made from mixed sea-water and pit-brine shew the best average in respect of freedom from insoluble impurities both organic and inorganic, and if we set aside the single specimen from Cheyur, the salt from pits is worst in both these regards. Salt made from pit-brine or partly from pit brine and partly from sea-water,* shews an excess over the other salts in the percentage of magnesium chloride, and the salt from pit brine alone stands at the bottom of the list, whether in respect to percentage of solid impurities or of all impurities, moisture included. The salt made from sea-water and pit brine shews best in respect to freedom from solid impurity. The close approximation between the percentage of organic impurity in salt made from sea-water brine and that made from backwater brine, (of which 15 from among 18 specimens analysed are from Ennore), may perhaps be pointed to as another argument against Mr. Falk's conclusion that the north Chingleput brine-supply is infected with organic matter to any dangerous extent. But we would not rely too much on any results derivable from this table, (1) because the analyses are too few in number, and (2) because, though the manufacturers of a salt-work may derive their brine from more sources than one, (*e.g.*, drawing from pits while pit brine lasts and resorting to the sea when the pits fail), the particular salt analysed is probably made from only one kind of brine, uncertain which kind.

371. The second part of the question put to us by the Government of India requires us to examine the composition and quality of the salt as sold by the retail dealers, *i.e.*, as it passes into consumption; and it will be convenient to notice in this connection the information which we have been able to collect in answer to the further question whether it is anywhere the practice for the wholesale purchasers of and dealers in Government salt to adulterate it before allowing it to pass into the consumer's hands, and whether it is anywhere the practice to re-dissolve and evaporate the Government salt, in view to obtaining a purer article for consumption.

372. We have already explained that the salts obtained from bazaars have been analysed in a less complete way than those obtained from the Government platforms. The analysis has been directed to obtaining the proportion of total chlorides, of moisture, of insoluble mat-

* The Coilpatam salt which contains more than 4 per cent. of magnesium chloride has largely affected the average based on only three specimens. The pits are the chief source of supply of Coilpatam, and perhaps the salt might be more properly put in the second class.

ter, and of organic matter. The number of bazaar salts so analysed was 67, of which 51 were sea-salts of the Madras Presidency (including 2 from South Canara), 4 were Bombay salts imported by Government into the West Coast Districts, and 12 were earth-salts.

373. The following table shows the average percentage results for each district for the 51 Madras salts, for the Bombay salts, for the earth-salts, and for all the bazaar salts taken together. The bazaar salts from Kurnool were entirely earth-salts, and the quality of salts of this class has already been discussed in paras. 281—284 supra, in connection the general question of earth-salt manufacture:—

Districts.	Number of specimens analysed.	Moisture.		Insoluble matter.		Total chlorine reckoned in terms of chloride of sodium.	REMARKS.
		When received for analysis.	After exposure to the air for 2 days.	Inorganic.	Organic.		
Ganjam	3	9.719	9.855	1.376	.217	87.263	
Vizagapatam	3	7.313	7.003	1.915	.178	88.335	
Godavery	3	8.654	9.653	2.118	.509	89.115	
Kistna	3	9.837	9.110	3.019	.197	96.546	
Nellore	3	10.489	10.622	2.056	.284	87.555	
Chingleput	2	4.923	4.324	2.520	.276	90.256	
South Arcot	4	10.588	10.917	3.136	.328	84.054	
Tanjore	4	9.472	8.916	4.839	.160	84.344	
Madura	3	5.159	5.599	2.449	.141	91.260	
Tinnevely	2	10.517	10.563	1.907	.223	87.262	
South Canara	2	10.605	11.193	2.432	.643	84.532	
Malabar	1*	21.628	21.265	.430	.120	77.305	* This specimen is from Anjengo, a detached British possession on the coast of Travancore. The Collector states that this place derives its supply from Travancore district. The salt is possibly Travancore home-made salt.
Cuddapah	2	7.370	9.571	1.158	.191	87.321	
Bellary	3	5.835	6.466	1.962	.202	86.412	
North Arcot	3	6.416	6.827	2.235	.360	89.707	
Salem	3	7.954	9.184	2.437	.202	86.372	
Trichinopoly	3	7.846	7.964	4.905	.266	86.456	
Coimbatore	2	8.886	9.051	2.758	.101	86.650	
Nilgiris	2	8.314	8.717	1.923	.027	86.267	
Total sea-salts, Madras Presidency	51	8.723	9.936	2.517	.259	87.192	
Bombay salts	4	5.945	4.768	1.854	.339	89.505	
Earth-salts	12	7.727	7.374	1.782	.273	80.949	
	67	8.375	8.443	2.346	.263	86.212	

374. From the percentage of chlorine reckoned in terms of chloride of sodium here entered, a deduction must be made, to get the true percentage of sodium chloride alone. Assuming that the bazaar specimens conform in respect of the relative proportions of the different chlorides contained to those which have been fully analysed, the deductions to be made are as follows:—

	Total chlorine reckoned in terms of chloride of sodium.	Deduction to be made.	Percentage of chloride of sodium.	Percentage in complete analyses.
51. Madras sea-salts	87.192	2.915	84.277	84.859
4. Bombay salts	89.505	3.491	86.014	85.951
12. Earth-salts	80.949	2.849	78.100	82.800
Total	86.212	2.822	83.390	84.734

This assumption, however, is not quite accurate; for the proportions of chlorides in the salts obtained from district bazaars, which are older and have undergone more exposure than the platform salts, will not exactly conform to those given by the complete analyses. The chloride of magnesium especially would be much reduced; but it is difficult to say by how much. After the correction above

made, the average percentage of chloride of sodium in the bazaar specimens of Madras salts and of the Bombay salts imported for the West Coast monopoly differs very little from that obtained as the average of the complete analysis of platform samples.

375. In the above table, the sea-coast districts have been placed first, and the inland districts last. We should expect to find that the moisture in salts received from inland districts would be less than on the coast. The inland districts are mainly supplied from the coast districts from Nellore to Tinnevely. The average percentage of moisture in 15 specimens from inland districts is 7.476, and in 19 specimens from coast districts 9.130—showing an excess in the latter of 1.654. Comparing the bazaar specimens with those completely analysed, we find that the bazaar specimens from coast districts contain on the average 8.723 per cent. of moisture against 9.281 in platform specimens, or less by .558; but the differences are wide in some districts. In seven districts the bazaar specimens contain less moisture by a percentage of 2.274 on the average; and in the remaining 4 districts more by one of 2.689. But in particular cases the divergence is much wider; thus the maximum excess in bazaar specimens is 7.205 in South Canara, and the maximum defect 5.830 in Godavery. The number of specimens from any one district under discussion is in fact so small that such divergences must be expected. The Bombay salts from bazaars shew 5.945 per cent. of moisture against 7.336 per cent. in the specimens from Government stores. Again, the difference between the average weight of the salt when received for analysis, and its weight after two days' exposure to the air is only .213 per cent.; but examination shows, that the salts of thirteen districts gained moisture to the extent of .609 on the average; while the salts of six districts lost moisture to the average extent of .477. The greatest gain of moisture, viz., 2.501 was in the salts from the Cuddapah district, and the greatest loss .727 in those from the Kistna district. During the beginning of May, when the analyses of these salts were in progress, heavy showers fell in Madras, and these, no doubt, together with changes in the atmosphere from excessive moisture to dryness caused by the alternation of sea-breezes and hot land-winds, go far to account for the variations just described.

Effect on specimens of exposure to the air.

376. In the platform specimens, the average percentage of insoluble inorganic matter is 1.730; in the bazaar sea-salts it is 2.517, shewing an increase of .787. The bazaar salts from South Canara average 2.432 per cent. of insoluble inorganic matter against 3.833 in the single specimen completely analysed; but those of the remaining ten districts shew a percentage increased by 1.073 on the average, or about 50 per cent. In the six coast districts from Nellore to Tinnevely the average percentage is 1.781; and in the inland districts supplied from them 2.787. The specimens of Bombay salt from the Government stores in Malabar shewed 1.226 per cent. of insoluble inorganic matter, and those obtained from bazaars 1.854 per cent. The increase in the quantity of matter of this kind found in the salts as they pass into consumption, does not seem excessive, considering the treatment which the salt undergoes in carriage, the number of times that bulk is broken on the salt passing from hand to hand, and the way in which it is stored by dealers, generally on the bare ground. The insoluble inorganic matter consists chiefly of silica, alumina and iron.

Organic matter in bazaar specimens.

The organic matter in the bazaar specimens averages .259 per cent., the platform specimens giving .156—an unimportant increase.

377. Thus, so far as analysis of the bazaar salts goes, there is no evidence of intentional adulteration with sand or earth-salt. The only instance of admixture apparent was in a salt from the Nilgiri district which looked like a mixture of Madras and Bombay

salt. Some of the specimens had sand adhering to the crystals, others had earth-stains, but these existed to a very slight degree, and not more than might have resulted from careless scraping in the pans, storage, or repeated breaking of bulk, rather than from wilful adulteration. It is to be noted, however, that all the specimens were purchased for the Commission by Government officials.

378. The replies of the Collectors on the subject of adulteration will be found in Appendix A. They do not appear to be based, to any considerable extent, on personal observation or examination of adulterated salt, and exhibit considerable variety of opinion. Five Collectors, however, distinctly express a belief that adulteration does, to some extent, prevail. Opinions are also divided as to whether the wholesale or the retail dealers are most to blame.

379. The substances stated to be used for adulteration are various, (e. g., earth-salt, sand or earth, salt-earth, sea-shells and ashes), but no Collector has recorded the result of a personal examination of adulterated salt—if such has ever been made. The Collector of Nellore states that the Hyderabad traders have a notion that a mixture of sand and salt-earth keeps the salt better and prevents wastage. The Collectors of Bellary, Cuddapah and Kurnool all state that earth-salt is mixed with monopoly salt in their districts.

380. On the whole, we think, we may state with confidence that except in the case of the Ceded Districts, where mixture with earth-salt is probably more common, wilful adulteration of monopoly salt does not prevail to any serious extent.

381. As to the practice of purifying the salt by re-evaporation, the evidence which we have collected tends to shew that it is not generally the practice to dissolve and re-crystallise the monopoly salt before use, in order to obtain a purer article, excepting among the European community, and with them only to the extent of what is required for table use, and more for the cleanly appearance of the salt than with a view to obtain a purer salt. The Jains in Chingleput and some of the well-to-do people of high caste in South Canara and in Malabar do, for special purposes, re-dissolve and evaporate salt for consumption. But the general method adopted amongst natives, when mixing salt with their food, is to dissolve the salt in water to get rid of the insoluble matter, and then make use of the brine. This practice is also adopted in the kitchens of Europeans.

382. The Government of India also ask whether there are any grounds for supposing that the people would prefer salt of a better quality than that now supplied to them. We inquired on this point in our Circular of the 28th January, and also asked whether any complaints had been made as to the quality of the salt sold under the monopoly. The replies of Collectors to the above questions, which are given in Appendix A, show that no complaints have been, or are made against the quality of the salt supplied to the people generally, except in Malabar and South Canara; but there have been cases of complaints as to the quality of the salt produced at particular places. Thus the Collector of South Arcot considers that there was good ground for complaint in respect of the salt sold at Killai which was light, bad, and dirty. The work was closed in 1874. Again he refers to the salt of Gundalam as light but adds that the people of Cuddalore have grown to like it, and prefer it to the Merkanam salt which is a far superior article. The Collector of Salem draws attention to the preference shewn for salt from certain particular depôts, and shews that while some people prefer Merkanam salt as being stronger and more wholesome, the majority buy Madras salt as being cheaper, although there is a general

impression that it is productive of cutaneous diseases. The Collector of Trichinopoly states that in the Trichinopoly taluk the people consider the salt from the Velanguai work bad, bitter, productive of itch and generally unwholesome. We believe it is the intention of the Collector of Tanjore to propose that this work be closed at once. From the above it will be observed that, as regards salt supplied on the East Coast, the complaints are neither of a serious nor a general character.

383. On the West Coast the Collector of Malabar mentions that the Tuticorin salt introduced into his district in 1874, was complained of as being bitter, and wanting in flavour and strength, and was supposed by some to be unwholesome and productive of cutaneous diseases; but he adds that, in his opinion, the chief fault it possesses is its extreme deliquescence.

384. The Collector of South Canara refers to complaints which were raised against Cutch salt about 1871-72, but on analysis this salt was pronounced by the Chemical Examiner to be the best imported into the district. The Deputy Collector also mentions complaints made against the Tinnevely salt between the years 1858-61. Complaints of this character are to a great extent the result of prejudice.

385. As to preference for a better quality of salt, there is not much positive evidence in the Collectors' replies, though a majority of them state that, in their opinion, a better sort would be preferred, if it could be got for the same or a lower price. The Collector of Malabar, however, states that a better sort of Bombay salt would be acceptable to the people; the Collector of North Arcot suggests that an improvement in the appearance of the Madras platform salt is desirable, and the Collector of Madras, while drawing attention to a probably unfounded prejudice against the Negapatam salt which was rejected by the people, who preferred using salt from Tuticorin though somewhat dearer, infers that the natives have their fancies, not that they would be ready to pay much for them.

386. There is, however, we think, sufficient evidence in facts which have come to our knowledge in the course of our inquiry to shew that consumers discriminate between different kinds of salt, and that the better kinds fetch higher prices and are preferred. In the Ganjam district, Nowpada salt is sold in places where, with cost of carriage, it must fetch a higher price than salt from Ichapore and Ganjam notwithstanding the difference of duty. Special prices are quoted for this salt in the wholesale marts of Vizagapatam, and traders pass by the salt-works of that district, and travel considerable distances to the pans in Ganjam, where better salt is to be had. Cheyur salt which is hard and heavy is carried into the North Arcot district, where it is known by a special name* and finds sale, notwithstanding the presence of cheaper rail-borne salt from Madras. Merkanam salt, which somewhat resembles that of Cheyur, goes by cart as far as the railway near Tripatore and rounds the south of the Shevaroy Hills through the Ahtur taluk to Salem itself. In these markets it commands a price 10 or 12 annas a maund higher than rail-borne salt. The Collector's statement as to the preference which exists for it has already been referred to. The works at Merkanam supply the whole of the north and west of the South Arcot district, and the salt from those works has driven the inferior salt of Gundalam and Killai to the south-west into Trichinopoly. At Trivalore, a depôt on the South Indian Railway, some 15 miles from Negapatam, and at Negapatam itself, the wholesale price of Vedaranyam manufactured salt is Rs. 250 per garce, and of Negapatam salt Rs. 240 per garce, notwithstanding that at the Government platform at Negapatam the price of the two salts is the same. The reason of the differential price is that both salts are not to be had there at will, but must be purchased in the order stored, and that Vedaranyam manufactured salt has not always been obtainable. At Trichinopoly the

* Eel-appu (salt like stone).

Adrampatam salt, which has about 70 miles of road carriage, commands a considerably higher price than Negapatam salt which has travelled 80 miles by rail, and the dealers even discriminate and place a lower value on salt from Velangani sold at the Negapatam depôt than on that of Negapatam itself. When the railway was opened between Tuticorin and Dindigul, the Tinnevely salt drove that of Negapatam which is inferior, but which costs less, entirely out of the market. White and black salts, as East and West Coast (Bombay) salts were called, were quoted at different rates in the tracts in which they met in Coimbatore. Before the price of the imported salt on the West Coast was raised, some Bombay salt, notwithstanding the old habits of the people, came as far east as Erode, a point beyond which little Madras salt went by rail, and which is little short of half way. Even still, though the West Coast salt has been almost entirely driven back in Coimbatore, the inhabitants of the Nilgiris prefer and pay higher prices for the West Coast salt which reaches the hills through the Wynaad chiefly, and the consumption of Madras salt which has begun since the enhancement of the price in the Malabar depôts is confined to persons from the East Coast districts. The Collector of Malabar quotes different prices as prevailing at Palghaut, for Bombay, Madras, and Tinnevely salts, that of Bombay salt being highest; and it is enough to refer generally to the preference that has always been shewn by the inhabitants of the West Coast districts for Bombay salt, which is reported to be of superior quality. There have been many cases on the East Coast in which it has been necessary to offer heavy discounts to get rid of inferior salts or to induce traders to resort to works where it was stored. On the whole, we think, that though facts and prejudices may be cited on the other side, there is ample evidence to show that consumers discriminate between different qualities of salt, and are ready to pay higher prices for salt of superior quality. There are in some cases, *e. g.*, that of the Vedaranyam spontaneous salt which is of excellent quality, unfounded prejudices, but these are isolated cases.

387. The importation of Bombay salt by land since the opening of the railway, on which the Government of India ask for information apparently as a test of a preference by the people for a better salt, has been very small, amounting only to 1,941 maunds in two years. The importation appears to have been partly experimental, and partly a consequence of the stoppage of traffic on the Madras Railway in 1874, whereby the ordinary source of supply was cut off.

Whether Bombay salt comes into Madras by rail.

Whether Bombay salt comes into Madras by rail.

CHAPTER V.—COST.

388. In the Resolution appointing the Commission the third question stated for our consideration is as follows: "What is the actual cost to Government of the monopoly salt, including under cost all expenditure or loss, actual or constructive, on account of or connected with the salt that would be avoidable were the entire salt supply furnished under a self-supporting system* of excise or imported by sea, and made to pay duty before leaving bond and left thereafter free from interference?" And in the letter from the Government of India to the Government of Madras, 12th June 1875, No. 189, the Government of India remark: "In this cost," (*i. e.*, the "real cost per maund of the monopoly salt, in each of the principal localities and in the Presidency as a whole"), "should evidently be included all losses by ordinary wastage or extraordinary calamities, the expenditure on all establishments, including a proportion of the salaries of the officers of the district by whom the manufacturing operations are managed, and the interest on all capital sunk in storehouses, plant and works, which could be dispensed with if the entire supply of salt was imported by sea and was free from all interference after paying duty on debarkation. It is almost needless to add that under an excise system the manufacturers, as in Bengal and other portions of Northern India, would be required to defray the cost of all guards and establishments requisite to prevent the removal of any salt from licensed works without pre-

* *i. e.*, a system under which the licensed manufacturer defrays all expenditure which Government incurs to protect itself against any violation or evasion by the manufacturer or his servants of the excise law and rules."

payment of the duty; so that alike under a system of excise or importation the only expenditure entailed on Government in connexion with the salt would be for such establishment additional to the existing revenue or police officials as might be necessary to prevent unlicensed manufacture."

389. The object of the investigation appears to be to ascertain firstly, whether under the Madras monopoly the duty of Rupee-1-13-0 per maund, which is supposed to be the rate at present applicable to the Presidency, is in fact realized; and secondly, what charges now incurred by Government would be saved under a system of self-supporting excise, or of importation. There are various charges, actual and constructive, incurred by the State in connexion with the salt revenue and properly to be set against it, but which either would have to be incurred under any system of administration, or have been items of loss not necessarily connected with the monopoly system. They are chiefly charges incurred for or tending to the enhancement or security of the revenue; but, not being charges incident to the making or selling the salt on account of Government, must be kept separate in the investigation of the first question above stated. They will be duly noticed in their proper place. The second question demands an analysis of the items of cost, and a separation of the charges borne by the State under a monopoly into those which would fall entirely on the manufacturers under an excise system, and those which would, in the first instance at least, fall upon the State, to be recovered if the excise system were made self-supporting.

390. The materials available for the inquiry are on the whole satisfactory. The Board of Revenue, in pursuance of the instructions conveyed in the letter from the Government of India to the Madras Government above quoted, called upon Collectors of salt districts to furnish returns shewing the quantities of salt made and the charges of all kinds incurred at each salt division for ten Fasli years ending Fasli 1284 (1874-5), and statements shewing the outlay on works from 1864-5, under the several heads of original works, repairs and temporary works, and also the actual cost or estimated value of all works now in use which were constructed prior to that year. We have made full use of these statements as to works and their cost; but we have not deemed it safe to use the Collectors' returns as to general charges, at least for computing the cost in each district or for the Presidency as a whole. The returns being for Fasli years are incapable of check by comparison with independent accounts, readily accessible, and such as to command confidence. They are, in many cases, not actual but hypothetical accounts; the police charges entered in them are insufficient, and the same appears to be the case as regards outlay on works. Further, it is usually found that returns drawn up, as these have been, by a number of different officers are framed on different principles, no matter how precise the instructions issued, and are therefore untrustworthy. We have accordingly had recourse to the Accountant-General's books, and have had extracted from them the charges incurred under "Salt" in each district during the ten official years 1865-6 to 1874-5. It is not possible to localize the charges in his books further than by districts; but it is sufficient compliance with the instructions conveyed to us. It is necessary, as will be seen below, to endeavour to find the cost at certain particular divisions, or works, and for this purpose we have been compelled to use the Collectors' returns; but as to these calculations, we desire to enter a caution that the estimates of cost at particular divisions which we put forward are, on this account, not very certain.

391. For police charges, which are not included under "Salt" in the Accountant-General's accounts, we have applied to the Inspector-General, and have been furnished with statements showing the strength and cost of the police, permanent and temporary, employed on salt duties in each district during the ten years ending 1874-5. These statements include, besides the salaries and allowances of the men, the charges incurred for clothing, for

* *e. g.*, under the item *Kudiyaram* (payment to manufacturers) they give the sums which would be due for the quantity of salt stored; not those actually disbursed.

arms and accoutrements, &c., (5 per cent.), the regulated proportion (2 annas in the Rupee) charged to provide for pensions to the men, and a sum on account of supervision by the district and central administrative staff, proportioned to the strength of police employed. The following is an abstract of these statements:—

Years.	Permanent force.				Temporary force.				Total.	
	Strength.	Salaries.	Other charges.	Total.	Strength.	Salaries.	Other charges.	Total.	Strength.	Cost.
		RS.	RS.	RS.		RS.	RS.	RS.		RS.
1865-66	1,114	1,03,768	46,972	1,50,740	373	15,218	7,253	22,471	1,487	1,78,231
1866-67	1,110	1,03,910	46,810	1,50,720	371	16,855	7,549	24,399	1,481	1,81,119
1867-68	1,122	1,10,708	48,768	1,59,476	476	18,757	9,655	28,412	1,598	1,87,888
1868-69	1,092	1,06,170	48,684	1,54,854	454	20,198	10,123	30,321	1,546	1,85,475
1869-70	1,075	1,04,663	46,934	1,51,597	438	17,607	8,927	26,534	1,513	1,77,591
1870-71	1,077	1,03,729	49,227	1,52,956	497	19,544	10,639	30,183	1,574	1,83,539
1871-72	1,077	1,04,154	47,479	1,51,633	593	22,719	12,212	34,931	1,670	1,85,594
1872-73	1,098	1,04,092	51,016	1,55,108	550	21,255	12,120	33,375	1,648	1,88,483
1873-74	1,136	1,10,290	51,785	1,62,075	626	24,694	13,391	38,085	1,762	2,00,158
1874-75	1,076	1,04,515	47,375	1,51,890	591	23,899	12,731	36,630	1,667	1,91,612
Total..	10,977	10,67,119	4,56,102	15,23,221	4,938	2,63,835	1,04,594	3,68,429	15,966	18,50,690
Average.	1,098	...	...	...	493	...	...	...	1,596	...

This statement shows that the cost of the police guards has increased on the whole during the ten years, but not materially, and that the increase has been entirely in the temporary force employed during the manufacturing season and for guarding swamps.

392. The Accountant General's books include all charges for works met from the grants for petty construction and repairs in the civil budget. These grants were first made in 1867-8, prior to which year outlay on salt works was provided for in the Public Works Budget. With the exception of a few large works and some roads classed as salt roads, the petty construction and repair grants include the whole outlay on salt works since 1867-8, and the expenditure was carried out for the most part by civil officers. The Collectors' detailed returns of outlay upon works purport to include expenditure by the P. W. D. as well as by revenue officers, and, as some check upon them, we have obtained from the Examiner of Public Works Accounts a statement showing the outlay by Public Works officers on salt works. We have also compared the Collectors' returns, so far as total outlay under petty construction and repairs year by year is concerned, with the entries under that head in the Accountant General's books, which are as entered in the margin. They approximate very closely; but there are some small discrepancies, chiefly caused by the Accountant General having debited in one year outlay which the Collectors have returned as incurred in another. It would be unprofitable, even if it were possible now, to reconcile the discrepancies; and as the Collectors' returns of outlay since 1867-8, shew a total slightly greater than the Accountant General's, and give details which are necessary for the classification of the works, we have adopted the Collectors' figures. For years before 1867-8, we are dependent upon them and upon the statement furnished by the Examiner of Public Works Accounts. They have been carefully compared, and, with certain exceptions, all outlay given in one or the other is included in our figures. These exceptions are certain works which appear to us to have been improperly included in the lists, not being correctly chargeable to salt. We have rejected from the list for Vizagapatam the cost of two roads constructed prior to 1864-5, amounting to Rs. 11,024 and Rs. 14,328, and from that for the Kistna district, outlay amounting under new works to Rs. 21,946, and under repairs to Rs. 13,876—total Rs. 35,822.

Of this, no less than Rs. 26,903 were expended from Local Funds, and the rest was spent upon inland roads which do not appear to us to have any pretension to be classed as salt roads. We have also struck out of the Chingleput list all outlay on the Cochrane's and Sadras Canals, amounting to Rs. 4,21,050 in the ten years. This outlay was incurred for the most part on portions of the canals not used for the transport of salt at all, and even includes the outlay on the extension of the northern canal into the Nellore district. Further the salt-boats pay to the credit of the Canal Funds tolls and dues which are charged* to the Imperial Treasury, and amply cover charges for the use of the canals. We have specially considered what proportion of the outlay on the Vedaranyam canal in Tanjore, which is used for the conveyance of salt to Negapatam, should be charged against salt. The correspondence which passed prior to the construction of this canal shews that the work was undertaken almost entirely to facilitate the transport of salt from Vedaranyam to meet the demand for the railway trade at Negapatam, though the canal has since its opening been used for general traffic. It was in 1874 placed under the (Madras) Canals and Ferries Act, and since that time dues have been levied and carried to the credit of the Canal and Ferry Fund. From 1871-2 to 1873-4 the cost of maintenance

Years.	New Works.	Repairs.
1864-65.....	9,604	.....
1865-66.....	9,723	.....
1866-67.....	15,525	.....
1867-68.....	31,211	.....
1868-69.....	27,910	.....
1869-70.....	30,251	4,348
1870-71.....	388	3,256
1871-72.....	496	4,941
1872-73.....	397	.....
1873-74.....	1,151	.....
	1,27,014	12,514

was provided for from Local Funds constituted under (Madras) Act IV of 1871, on the assumption that the canal belongs to the category of general communications. Under these circumstances it appears to us that it will be proper to include, as charges against salt, three-fourths of the outlay incurred from Imperial Funds in the construction and maintenance of the work. The outlay on the line of navigation in each year is given in the margin as entered in the Collector's and Controller's lists.

393. The following statement shows in one view the whole charges incurred in each year, which are to be dealt with in computing the cost of the monopoly salt. In the last three years appear some small items on account of Dr. Ratton's employment, which are taken from the Accountant General's books and which will be further noticed below:—

Official Years.	From Accountant General's Accounts.					From Collectors' lists and Controller's statement.			From Inspector General's statement.	Total.
	Purchase of salt & manure, &c.	Establishment.	Contingencies.	Miscellaneous.	Dr. Ratton's employment, &c.	Original permanent works.	Repairs and temporary works.	Total.	Police charges.	
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
1865-66	10,58,068	2,19,712	19,138	1,90,768	.....	65,657	38,134	1,03,791	1,76,231	17,69,103
1866-67	10,54,117	2,07,452	11,277	1,71,847	.....	41,605	27,525	69,230	1,81,119	16,93,542
1867-68	8,17,618	2,38,983	12,683	1,59,713	.....	74,417	59,953	1,34,370	1,87,888	15,51,952
1868-69	8,22,681	2,31,342	19,578	88,570	.....	1,48,283	72,557	2,20,840	1,95,475	15,58,587
1869-70	9,51,843	2,24,312	12,261	1,39,609	.....	82,945	45,313	1,28,258	1,77,591	16,35,104
1870-71	7,92,949	2,24,772	16,014	6,82,663	.....	59,416	63,475	1,22,891	1,83,539	14,72,658
1871-72	9,98,670	2,23,304	23,834	2,90,921	.....	77,987	84,305	1,62,292	1,86,594	17,26,125
1872-73	9,94,176	2,22,848	29,244	87,402	9,334	1,15,724	73,947	1,89,671	1,88,483	16,29,758
1873-74	9,52,820	2,27,001	32,584	1,39,321	10,206	1,17,861	83,094	2,00,955	2,00,158	17,63,045
1874-75	8,29,932	2,20,358	34,353	1,28,374	10,093	1,12,742	93,653	2,06,395	1,91,612	16,28,147
	91,95,874	22,29,044	2,03,101	13,78,399	29,633	8,37,067	6,44,458	15,31,425	18,60,590	1,64,27,336

394. The details of these figures for each district and year will be found in Statement A, Part I, Appendix D. The works are there distributed into three classes, (1) those connected with salt manufacture, comprising all channels, embankments for the protection of the pans from inundation, or for storing brine, sluices, &c.; (2) works for storage of salt and for revenue purposes, i. e., platforms, with moats and drawbridges, the fences round them, cutcherries, police huts, and guard-rooms; (3) sundry works undertaken in the

* The amount according to the Collector's return for ten Estates was Rs. 1,76,647.

interest of the revenue or as tending to its development. These are principally roads to connect the salt depôts with main lines of communication, and approaches to facilitate access to the platforms; but they comprise also topes and wells, and sheds for the accommodation of traders resorting to the stores. Opinions may differ as to the propriety of including items of this kind under cost of salt, and it is apparent that the line as regards the inclusion or exclusion of salt roads so called, has not been drawn on any very definite principle by the Collectors in framing their lists of salt-works. We have not the local knowledge which would enable us to criticise them in detail, and we have therefore included all works entered (except those mentioned in para. 392), taking care to exhibit the charges in such a way that they may be separated by those who are of opinion that they ought not to be included in the cost of salt. It will be seen that the amount, when reduced to an average rate per maund, is extremely small.

395. The instructions quoted at the beginning of this chapter require that only interest on the capital cost of permanent works should be charged against the salt. Accordingly a sort of capital account has to be constructed, and the capital value for each year on which interest has to be allowed must be ascertained. We have thought that 4 per cent. is a proper rate of interest to allow, that being the rate at which the State can borrow. The starting entries in this capital account are the Collectors' Statements, already adverted to, shewing the actual or estimated cost of all works now in existence which were constructed prior to 1864-5. As the series of years which we have taken for the calculation of cost commences with 1865-6, we have added to the Collectors' figures the outlay on permanent works in 1864-5. The sums are entered in Statement A, Part I, Appendix D. At the top of the column headed "capital cost" and in the next two columns will be found the sum of outlay on permanent works of each class up to the beginning of each year, and the interest thereon at 4 per cent.

396. The following Statement shews in one view the capital cost of works up to 1865-6, and the outlay on permanent works and repairs which has been incurred since. The capital value of the work up to 1865-6 was Rupees 5,12,284, and Rupees 8,37,037 have since been spent on original and permanent works; so that the capital value of the works at the end of 1874-5 is estimated at Rupees 13,99,321, or say 14 lakhs of Rupees. The outlay on repairs has been Rupees 6,44,458. The Vedaranyam canal is classed as a revenue work, having been undertaken for the transport salt to the Negapatam stores for sale on Government account:—

Districts.	Works for salt manufacture.			Works for storage and revenue purposes.			Sundry works.			Total.		
	Capital cost up to 1865-6.	Since expended on permanent works.	Since expended on repairs and temporary works.	Capital cost up to 1865-6.	Since expended on permanent works.	Since expended on repairs and temporary works.	Capital cost up to 1865-6.	Since expended on permanent works.	Since expended on repairs and temporary works.	Capital cost up to 1865-6.	Since expended on permanent works.	Since expended on repairs and temporary works.
Ganjam	25,621	10,992	30,218	23,681	29,937	14,617	12,465	12,506	11,461	21,167	62,445	55,995
Vizagapatam ..	14,998	20,714	31,575	18,282	9,942	8,472	10,907	9,243	10,757	45,587	38,859	59,804
Godavery	...	5,863	12,167	...	18,723	2,852	...	4,803	250	...	20,392	13,349
Kistna	...	...	5,175	54,369	12,353	12,903	2,935	...	11,913	36,564	13,410	30,002
Nellore	...	1,178	16,395	16,600	59,744	13,858	276	29,779	14,392	16,876	83,761	54,553
Chingleput ..	81,932	1,13,765	2,15,755	75,613	1,32,084	37,169	...	27,931	1,443	1,60,597	2,76,778	2,67,169
South Arcot ..	3,420	39,115	10,533	13,169	25,770	18,891	4,630	4,025	1,981	28,200	58,915	31,453
Tanjore	19,834	13,670	13,026	27,932	143,736	41,645	12,135	6,527	8,000	50,971	1,64,087	62,675
Madura	...	9,659	21	...	12,410	10,435	2,520	...	3,211	9,520	22,063	15,637
Tinnevely ..	2,050	13,638	3,181	29,169	45,238	9,851	15,592	9,394	12,903	43,614	68,270	25,946
Total E. Coast.	1,50,933	2,20,588	3,35,136	2,66,920	1,35,002	1,70,676	61,843	1,01,385	84,375	31,226	8,92,273	7,93,190
Malabar	...	...	...	25,900	7,917	21,846	...	...	...	25,900	7,917	21,846
South Canara ..	...	...	...	5,783	62,215	23,469	...	6,930	653	6,768	69,145	26,422
Total W. Coast.	...	...	...	30,683	70,132	55,315	...	6,930	653	30,968	77,053	51,268
Grand Total ..	1,50,933	2,20,588	3,35,136	2,97,603	1,55,134	2,26,991	61,843	1,11,315	85,028	31,284	9,69,327	8,74,458

397. It will be observed that in no less than 5 manufacturing districts no outlay up to 1865-6 is entered under works for the manufacture of salt, and in two, no outlay since. The whole capital value of works of this class, in East Coast districts other than Chingleput, is no more than Rupees 70,000. In two districts no outlay on storage or revenue works appears prior to 1865-6. These considerations suggest doubt whether the figures can be accepted as adequately representing the initial capital value. The Statements of outlay subsequent to 1865-6 may doubtless contain some omissions, but for all practical purposes we have full confidence in them. As to the previous outlay no better estimate is now possible; and, in considering the figures, it is to be remembered that they purport to shew only the cost (known or estimated) of works now existing which were constructed prior to 1865-6. Indeed they are confessedly incomplete, for the Collector of Madura reports that no record of any outlay whatever on salt-works in his district can be traced till 1866-7, though some undoubtedly took place, and it is probable that there are omissions in the returns from other districts also. The Collector of Godavery explains that the reason of no entries appearing in his return up to 1865 is that the site of the manufacture was changed since that year. But it was rather a concentration of pans than a change of site, and there exist some channels, platforms, and a mud-built cutcherry, the cost of which is not entered. No outlay on permanent works appears in this district before 1872, and that which has been incurred since was chiefly at the re-opened station of Mogaltur.

398. But the real explanation of the apparent inadequacy of the figures under discussion is that in the earlier years works of all kinds were executed by the ryots at their own cost and entailed little, if any, expense on Government. There is ample evidence of this fact. On reference to the statements of charges in Mr. Bayley's memorandum, it will be observed that the expenditure on "maramut" or repairs was only an infinitesimal sum for the whole Presidency, and nothing at all in most districts.* It is not likely that, if outlay on works was being incurred from other sources than salt funds, Mr. Bayley would have overlooked the fact. But the works must have existed and been maintained, else manufacture could not have been carried on. The Collector of Chingleput has entered in his present list 10 "boat" (i.e., navigable or main) channels, which he states were excavated by the ryots. In a letter given in Appendix F to Mr. Plowden's report,† the Deputy Collector of Madras expressly states that the "irrigation" (i.e., brine supply works) "up to the present day" have been solely in the hands of the manufacturers, and he speaks of the contingency of their being "undertaken and repaired by the Circar." At page cxlix of the same Appendix is given the form of ryots' agreement then in use. It contains the following clauses:—

"8. Raised platforms for protecting salt from accidents by floods shall be erected and repaired at our own expense, and should we suffer any loss by rain or inundation, we will set no claim on the Circar for such loss.

"9. The digging of *old* (sic. but ? new) and repair of *new* (sic. but ? old) channels and calways are to be undertaken properly, so as to make them navigable at all times by exportation boats. In the event of such working being necessary, and the cost ascertained on estimate, we will subscribe our share, and in the event of our failing to do so, * * * the Circar shall undertake the work by advancing the money and reimbursing themselves at uniform rates from the krudivaram."

So also the Collector of Tinnevely (page cxxxvi of of same Appendix) wrote "the beds, wells and platforms for storing the salt, with any moderate amount of embankment, as well as all necessary hedging and such like small matters are made "by the ryots."

399. The form of agreement prescribed in 1855 by the Board for general adoption makes the ryots bind themselves to repair the irrigation and navigation

	Rs.
* Fasli 1260	519
1261	795
1262	1,315

† Page cxxxix.

‡ 6th April, 1834.

channels, and it was not till the orders of 1862, already noticed in the historical chapter (*supra* para. 69), were issued that the liability of the ryots was confined to the up-keep of the minor channels. Thus there is evidence that in the earlier days the ryots even provided for the storage of the salt, and it is probable that the class of "small matters" referred to by the Collector of Tinnevely was pretty widely extended. Since the employment of Mr. Clarke to report on the salt administration in 1862, very considerable outlay has been incurred, chiefly in carrying out improvements recommended by him, and the condition and efficiency of the works has greatly improved since that time. Thus the Deputy Collector of Nellore writes, "in the majority of cases it would be impossible to identify our existing platforms as the 'mounds of earth known by that name ten years ago.' These facts may tend to explain the apparently low capital value assigned to the works before 1865. It is to be remembered, on the other hand, that the cost is in many cases estimated at present rates, and the works doubtless cost less when constructed."

400. We have, it will be noticed, charged nothing for depreciation, assuming that the outlay on repairs keeps the works in order. The distinction between repairs and improvements properly chargeable to capital is not very distinctly drawn, and it is not improbable that charging off the full amount of the latter class of items would counterbalance the percentage charge which might be made for depreciation. The average charge for interest and repairs comes to about ten per cent. on the capital value. This value and the charge for interest have been increasing and will increase yearly, because it has not been possible to revise the capital account from year to year as works fell out of use, or stations were closed. We think that the charges which we have made against the salt on account of works are approximately sufficient, and are entered with as much completeness as it is now possible to attain.

401. The next item in Statement A, Part I, Appendix D, which calls for notice is the entry of "land assessment on cultivable land," and, in connection with this, the present appears to us to be the proper place to reply to the sixth question put to us in the Resolution of the Government of India, viz., "What is the extent and value, for purposes other than salt manufacture, of the whole of the land in the Presidency now occupied by 'open salt-works?'" The question seems to have been suggested by the assertion of Mr. Falk that much valuable land, which would otherwise be occupied for rice and jute cultivation, is unprofitably devoted to salt manufacture, and the point is one of those to which attention was especially called by the Secretary of State in his Despatch, No. 8, dated 29th July 1875. In our Circular of the 28th January, we accordingly endeavoured to obtain information on the subject, by enquiry—

- (1.) as to the value, for other purposes than salt cultivation, of the land now occupied by salt-works;—
- (2.) as to the nature and value of land taken up for salt works during the last ten years;—
- (3.) as to the fate of land once occupied by salt-works, but abandoned within the last twenty years, and its revenue, if brought under cultivation.

402. The facts elicited in reply will be found tabulated in Appendix A, pp. xxx—xxxii. On the first point the Collectors report that of the total area of the works, viz., 27,411.22 acres, only 3,847.31 or 14 per cent. could be cultivated otherwise than with salt, and that the revenue which is or might be assessed upon these lands amounts to Rs. 4,758-5-6, or Rs. 1-3-9 per acre. These figures, however, especially those relating to areas, are somewhat uncertain. The proportions returned as cultivable differ much in different districts.

403. On the second point the figures show that of 2,238.19 acres taken up during the 20 years, 515.19 acres were cultivated land; but compensation in money

was paid or is due only for 224.04 acres. The sum of Rs. 15,701 represents the value of 197.96 acres, and gives an average of Rs. 79-5-0 per acre. The average is swollen by very high rates paid in Vizagapatam for 91.37 acres, at Rs. 129-6-3 per acre. It would be unsafe to argue from these averages to the average value of all the land occupied by the works, for the land taken up was probably superior in quality to the general run of salt lands. The interest on the money so paid has not been charged in the accounts against the salt revenue; but the amount would be too small to make any appreciable difference in the cost of the salt.

404. On the third point, it will be seen from p. xxxii, Appendix A, that only 50 acres have been taken up out of a large area once occupied by no less than 46 salt stations. The area abandoned has not, in all cases, been given by the Collectors, but at a very low estimate the proportion taken up has been only 1.6 per cent., and the whole of that occupied has not been cultivated. It is reported that attempts to utilize the salt lands in Vizagapatam have been unsuccessful, and the same result, we believe, has attended similar attempts in Tanjore, notwithstanding the presence of fresh water for irrigation. The Collector of Godavery states his opinion that, having regard to the fate of the abandoned salt lands, the extent of lands now in use entered as cultivable in Statement I, pp. xxx and xxxi, Appendix A, is over-estimated. Yet irrigation could probably be made available for nearly the whole of the land at Pennuguduru in that district. On the whole, it is clear that the result as regards the occupation of abandoned salt lands has been such as to lead to the belief that those now under salt culture would not be otherwise utilised, if salt manufacture were abandoned.

405. We have ourselves seen a considerable extent of the salt lands, and we observed in almost every case large tracts of similar land adjoining the pans, but lying waste. We think that it would be going too far to say that the lands are unfit for cultivation, or even that so large a proportion of them as represented by the figures above given is so. But it may be asserted generally that, in the present relation of demand and supply of land for purposes of agriculture, and in the existing condition as regards pressure of population upon the soil, the lands used in the production of salt are not such as to command any value, and that the statements of Mr. Falk on the subject are much exaggerated. Considered as salt lands, and with reference to the profits derived from salt culture, they no doubt possess considerable value, but we are not asked to estimate them with reference to such considerations. We have been told to include in the cost of salt all items of constructive loss to Government; and we have therefore entered in Statement A, the revenue which would, or might, be realizable from them if not under salt culture; i.e., the assessment on the cultivable portions.* From what has been said, however, it will be seen that the charge is, as to amount and basis, a nominal one. In the district of South Canara, the pans are situated in lands forming parts of wargs or private estates, and the assessment payable on the pans actually used is remitted yearly. We have entered the amount of these remissions in Statement A, Part I, Appendix D.

406. The columns headed kudivaram (payment to manufacturers) and "cost of salt imported" make up the total above given as appearing in the Accountant General's books. The second appears only against the West Coast districts. The first item will be further noticed below. Under "establishment" are comprised all payments for division and station staff, and the whole salaries and offices of the Salt Deputy Collectors.† We have grouped under "contingencies" all charges for office contingencies, travelling allowances, office rent, and official postage, and also

* The land which forms the platforms at the Madras Cotnara is now of very considerable value. But it has been reclaimed from the bed of a backwater at an outlay of Rupees 92,475; which sum is included under capital outlay in Statement A, Part I, Appendix D, under works of storage and revenue, and interest is charged upon it. The site is now worth far more than that sum.

† According to the Collectors' returns the cost of Deputy Collectors and their offices amounted for ten years to Rupees 6,76,180, or about a third of the whole establishment charges.

a small item which appears in the Accountant General's books, in the years and to the amounts marginally noted, under the designation "petty works for the manufacture and storage of salt." The nature of this item is not clear. It must refer to works of such a petty character that the preparation and sanction of estimates and allotments necessary for petty construction and repair works is deemed superfluous, and its proper place seems to be under contingencies. The increase in the amount deserves notice and calls for check. It is to this item and official postage that the increase in contingent charges observable in recent years is due. The police charges have already been sufficiently noticed.

407. We have now to notice the item "miscellaneous charges", which comprises all other charges debited to salt in the Accountant General's books. These are so mixed up that it is impossible to take out any specific charge for the whole series of years. It is unfortunate that these minor charges have not been grouped by the Accountant General on any definite or uniform principle; for, though the figures represent the aggregate correctly, yet it is impossible to use them for the purpose of obtaining, for instance, the cost of storage, or that of conveying salt to store or of collecting and destroying spontaneous salt, or of weighing-machines and weighing. In the first four years there appears a considerable item, "cost of export." This represents the shipping charges on salt exported by sea, which under the system in force up to 1868-9 were borne by Government, the salt being delivered "free on board" for Rupees 18 per garce. This system, as will be seen below, entailed considerable loss; but the loss appears to us rather to belong to charges against the revenue than to be one properly included in the cost of salt, and we have, therefore, excluded the items amounting to Rs. 1,08,696 from the charges finally brought against the salt in Statement B (Part I, Appendix D), and will deal with them separately. The entry disappears for two years, and reappears in 1871-2 grouped with "miscellaneous," and from 1872-3 with "cost of gathering and destroying spontaneous salt." It is here probably the batta advanced to peons sent on board with salt for export, which is now recoverable from the exporters. "Cost of repair of salt machines" down to 1869-70 is grouped with "other charges;" in 1870-1 and 1872-3 "scales and weights" are grouped with "rewards on confiscations, &c.;" in 1871-2 the item is not separately shewn, and from 1873-4 it is given by itself. "Charges for conveying and storing salt" was a heading in the accounts from 1869-70, but no entries occur in several districts. This item is very large in the district of Chingleput, owing to the system of conveying salt to Madras and Home's Gardens from distant pans; in Tanjore, owing to the same system between Vedaranyam and Negapatam; and in South Canara, on account of carriage to inland depôts. The cost of carriage of salt sent from one district to another seems to be correctly charged in the accounts to the receiving district, under the heading "freight." The last column in Statement A, headed "miscellaneous realizations," consists of petty recoveries, and receipts from sale of old plant and materials and such like items, which are entered in the accounts current, and are properly to be set off against the miscellaneous charges. They are large in the districts of South Arcot and Canara, because they comprise, in the former case, the recoveries from the French Government on account of the carriage of the salt supplied to them, and, in the latter, the recoveries of cost of carriage from purchasers of salt at inland depôts.*

408. The totals of charges for each district which appear in Statement A are transferred to Statement B, (Part I, Appendix D) where the average rates per maund are worked out for each district and for the Presidency. As to the process, some further explanations are necessary. First, it is evident that when the Government of India speak of the cost of the monopoly

* These "miscellaneous realizations" do not agree exactly with those in Appendix B, because we have here excluded some items, such as sums realized from sales of new pans in Tanjore, adjustments of prices when salt bought for export was afterwards declared for consumption in India, &c., which have nothing to do with the miscellaneous charges, and ought not to be set against them.

salt, they mean the cost of salt brought to sale or made available for sale under the monopoly, and that therefore the proper method of proceeding is to deduct from the total quantity manufactured or in any way brought to account, the quantity lost by wastage or otherwise, and to divide the whole expenditure by the remainder. Besides the recorded wastage, which is only the deficiency found in heaps actually weighed out, (i. e., expended in every way except by sale of full heaps), the discount granted on wholesale sales, and even on retail sales, has to be deducted. The theory now held is that the discount is given to cover wastage. If it does cover it, then it is clearly to be treated as wastage; if not, some salt is given away, and its cost must go to enhance that of the remaining salt which pays. In the latter case there is a further loss, viz:—of the duty on the quantity so allowed to pass into consumption duty-free; but of this more hereafter. Besides the ordinary 5 per cent. discount, special discounts, sometimes as high as 20 per cent. of the price, have been granted from time to time when it was desired to clear off inferior or old stock, when wastage on heaps was known to be very great from special causes, when stations were closed and in like cases. The above reasoning as to ordinary discount applies equally to these special rates, and the quantity represented by the discount is equally to be deducted. Almost the whole of the salt sold on special discount was sold wholesale, but a small quantity is known to have been sold retail, and as to a small quantity there is doubt. The last two together amount to less than $1\frac{1}{2}$ lakhs of maunds in the ten years. In the case of the heaps sold retail on special discount, the wastage is recorded, and there is therefore a double deduction, but the quantity is unascertainable, though very small. There is a further small item, "wastage in transit," which refers to salt sent from one district to another. It is the difference between the quantities shewn by the accounts to have been despatched and those shewn as received. This wastage does not seem to have been entered in the stock accounts. There have been three cases of transfer from district to district within the ten years, viz:—from Chingleput to Malabar in 1865-6; from Nellore to Kistna in 1871-2; and from Chingleput and Kistna to South Arcot in 1873-4 and 1874-5. The gross quantities sent from district to district are entered in our Statement B, under receipts, and the wastage in transit deducted in the receiving district. The transfers of course do not enter into the totals for the East Coast and for the Presidency; but the wastage in transit being a substantive loss is there still included. There are entries under charges in Statement B, against the receiving districts, "cost of salt received from other districts," which are got by multiplying the quantities despatched by the total average rate of cost arrived at for the supplying district. This salt by the time it is brought to sale has increased the charges of the supplying district, as well as those of the district in which is brought to sale, and the amount is therefore fairly brought against the salt of the latter district. The charge, however, does not enter into the totals for the East Coast and for the Presidency.

409. Besides the charges hitherto noticed, interest at 4 per cent. on the money sunk in the salt is charged for the period for which on the average the salt remains in store. The amount sunk per maund is obtained by taking the whole of the first four heads of charge which, subject to the explanations which will be given below, roughly represent the prime cost of the salt, and half the remaining charges for establishment, police, &c., which represent the cost of obtaining, guarding and selling it. The remaining half of these charges is assumed to accrue when the salt is sold. As to the period for which interest is to be allowed, we observe that the average initial balance for the Presidency and for almost every district was about a year's supply, and that it is the rule that the old salt shall be sold before the new. We may, therefore, assume that the average period for which the salt is in store will be got by dividing the average quantity received yearly by the average quantity expended. No more than a rough approximation to the item we are discussing can be obtained, and we think the assumptions we have just explained give results sufficiently near the truth. We allow ten times the annual interest on the value of the average receipts at the rate above stated, for the period for which on the average the salt is in store.

410. There is only one other item to be explained, viz., the three pies per maund entered against the salt on account of general supervision. The whole cost of the Salt Deputy Collectors, who are "the officers of the district by whom the manufacturing operations are managed," has already been included under "establishments"; but, to arrive at the real net excise or duty which is obtained under the present monopoly, it is necessary that some charge should be made on account of the supervision and direction of the administration by Collectors and the Board of Revenue, and the keeping of the financial accounts of the department. The offices of these authorities have not been organized with reference to the salt administration; there is no difference on this account between the establishment of a Collector's Office on the coast and inland; and ordinarily the salt administration makes but small demands upon the superior authorities, certainly not in proportion to the amount of the revenue. We have made some calculations as to the proportion of receipts and charges connected with the salt revenue to the total receipts and charges of all kinds dealt with by Collectors and the Board; but the results are so obviously misleading that we do not think it necessary to reproduce the figures. The resulting rates per maund of salt range from 3·3 pies in Tanjore where the land revenue and other items are large to 10·5 pies in South Canara where they are small, and average 5·8 pies. This represents nearly two lakhs of rupees a year which is equivalent to the whole cost of salt establishment proper, and is far in excess of the sum for which much more efficient management of the department might be secured. We think that a sum of a lakh of rupees a year, or roughly a uniform charge of 3 pies a maund is an amply sufficient allowance, as representing the supervision of the Board and Collectors; and that this rate should be taken to cover also the cost of Dr. Rattron's employment, some 30,000 Rupees altogether, (vide supra), if this is held chargeable against the salt. He has had nothing to do with the salt brought to sale during the period we are considering, it was expressly ordered that no changes should be introduced until the system of manufacture suggested by him had been practically tested on a sufficiently large scale, and his employment should at any rate be viewed as part of the general salt administration. We have therefore not brought the sum in question specifically against the salt.

411. The following statement exhibits the average rates per maund arrived at in Statement B:—

Districts.	Land assessment.		Payments to manu- facturers or im- porters.		Cost of salt re- ceived from other districts.		Works for salt manufacture.		Establishment.		Contingencies.		Police.		Miscellaneous.		Works for storage and revenue pur- poses.		Sundry works.		Interest on value of salt.		Total.		General supervision.		Total.	
	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.	A.	P.
Ganjam	0	0·1	1	3·1	...	...	0	1·2	0	4·9	0	0·5	0	4·2	0	1·2	0	0·7	0	0·5	0	1·0	2	6·1	0·5	2	9·1	
Vizagapatam	0	0·5	1	3·2	...	...	0	4·3	1	2·7	0	1·4	0	11·3	0	1·5	0	2·0	0	2·1	0	1·4	4	6·0	0·7	4	9·6	
Godavery	0	0·2	1	5	...	...	0	0·9	0	6·7	0	0·7	0	6·9	0	1·2	0	0·2	...	...	0	1·0	2	10·8	0·3	3	1·8	
Kistna	...	...	1	2·4	0	0·2	0	0·2	0	6·4	0	0·5	0	4·5	0	2·0	0	1·2	0	0·9	0	0·9	2	7·3	0·3	2	10·3	
Nellore	...	...	1	5·4	...	...	0	0·5	0	8·2	0	0·9	0	8·0	0	1·1	0	0·8	0	0·0	0	1·3	2	2·3	0·3	2	5·2	
Chingleput	...	...	1	7·5	...	...	0	3·5	0	5·3	0	0·4	0	5·1	0	8·3	0	1·1	0	0·1	0	1·3	3	9·3	0·3	4	0·3	
South Arcot	0	0·3	1	8·3	0	3·0	0	0·9	0	8·6	0	0·6	0	9·1	0	3·9	0	1·8	0	0·3	0	1·4	4	4·2	0·3	4	7·2	
Tanjore	...	...	1	5·2	...	...	0	0·5	0	6·5	0	0·7	0	5·6	0	2·2	0	2·2	0	0·4	0	1·2	3	0·2	0·3	3	3·5	
Madura	...	...	1	6	...	...	0	0·1	0	8·2	0	1·0	0	6·1	0	0·9	0	0·0	0	0·3	0	1·1	3	1·2	0·2	3	4·2	
Tinnevely	0	0·2	1	6·7	...	...	0	0·2	0	5·3	0	0·7	0	2·7	0	1·1	0	1·0	0	0·9	0	0·9	2	7·3	0·3	2	10·3	
East Coast	0	0·1	1	5·7	...	...	0	1·5	0	6·2	0	0·3	0	5·8	0	3·5	0	1·2	0	0·5	0	1·2	3	2·6	0·3	3	5·6	
Malabar	...	...	7	6·3	0	0·3	...	...	0	2·3	0	0·2	0	0·3	0	2·2	0	1·2	...	...	0	4·0	8	4·5	0·3	8	4·8	
South Canara																												
{ Home																												
{ Imported																												
{ Both	0	0·3	5	7·3	...	...	...	...	0	11·3	0	0·7	0	7·1	0	0·5	0	2·5	0	0·1	0	3·7	8	10·2	0·3	9	1·5	
West Coast	0	0·3	7	2·5	0	0·3	...	...	0	5·4	0	0·3	0	2·8	0	1·3	0	1·7	...	...	0	3·6	8	6·7	0·3	8	9·7	
Presidency	0	0·1	2	2·5	...	...	0	1·3	0	6·4	0	0·6	0	5·4	0	3·3	0	1·2	0	0·4	0	1·5	3	10·7	0·3	4	1·7	

412. The average rate of kudivaram or payment to the manufacturers* is, it will be noticed, generally lower in the northern districts. It unavoidably comes out too low in several districts owing to the inclusion of spontaneous salt in the divisors while the charges divided embrace payments to manufacturers only, those for collection of spontaneous salt being included under "miscellaneous" as explained above. The rate for the Kistna district comes out very low, on account of the semi-spontaneous salt of Pandraka, which was paid for during the period in question at from Rs. 3-12-0 to Rs. 5 per garce. The payments for this salt, however, are, we believe, included under payments to manufacturers and not under "miscellaneous". In all districts except Tanjore, where the bulk of the spontaneous salt proper was collected, the correction required is very small, as will be seen from the figures given in the margin. In Tanjore the rate is enhanced by 1·8 pies; in Madura and on the East Coast as a whole, by 2 pie. It is unaffected in Ganjam and Vizagapatam.

413. Taking the East Coast by itself, the cost of the salt including the charge for general supervision is 3 annas 5·6 pies, and the excise realized is therefore Rs. 1-12-6·4. On the West Coast, the excise is much less; but we have discussed this question in our separate report on the salt supply for that coast, and it is only necessary to remark here that the anomaly has been almost entirely removed, except in regard to South Canara indigenous salt, by the increase of price under Act X of 1875.

414. On the East Coast there are very considerable differences in the cost. In three districts, Ganjam, Kistna and Tinnevely, the cost is, including supervision, less than 3 annas; and the full excise is obtained. Excluding supervision, the cost is within 3 annas in Godavery also, and is only just over it in Tanjore. The salt of Vizagapatam stands highest as to cost, the rate being 4 annas 9·6 pies per maund, and that of South Arcot next, at 4 annas 7·2 pies. The cause of the high cost in Vizagapatam is evidently the existence of numerous small works, whereby the cost of all charges, except kudivaram, but especially establishment, police and revenue charges generally, are enhanced in proportion to the quantities disposed of. It has six divisions, a number exceeded only by Nellore, Tanjore, Tinnevely and Chingleput, (if the separate manufacturing divisions in the last-mentioned district are to be counted as distinct for the present purpose). The transactions in Vizagapatam are also the smallest of all, and it is apparent as a general rule that the smaller the transactions the higher the cost. In Godavery the transactions are next smallest, but the salt there costs less than the average, owing to the concentration of the manufacture and consequent reduction of revenue charges. There was only one division in the district up to 1872-3 and there have been only two since. The cost in South Arcot is very large owing to small transactions, high kudivaram, and strong police, but, above all, to the failure of stocks owing to bad seasons, which necessitated the importation of considerable quantities of salt from other districts. The freight on the salt swells the miscellaneous charges. The district has also to bear the net charges of the supply of salt to Pondicherry, which are included in miscellaneous, and enhance the cost by about 2 pies a maund. The cost in Chingleput is third highest, notwithstanding the magnitude of the transactions, which are one-fourth of the whole. The causes are the very large outlay which has been incurred in channels and works for salt manufacture in the northern divisions, and the heavy charges incurred in trans-

* It is to be remembered that the rates here given are enhanced for wastage.

porting the salt from those pans to the sale depôt in Madras, and from Vadasemmanjeri to Home's Gardens.

	Quantity carried, Fasli 1275 to Fasli 1284.	Boat hire.	Canal Tolls.	Total.
	Indian Maunds.	Rs.	Rs.	Rs.
To Madras	1,312,531	2,09,207	1,78,633	3,82,840
Per maund		3 pies	2-5 pies	5-5 pies
To Vadasemmanjeri ..	821,569	20,903	3,014	23,917
Per maund		5-5 pies	0-1 pie	0-6 pies

The figures given in the margin from the Collector's returns of cost, shew how expensive this transport is. The cost of storage at the Madras depôts is also, as will be seen presently, very

high. The cost of carriage of salt to Negapatam in Tanjore is also very great. The quantity carried from 1867-8 to 1874-5 was 12,05,859 Indian maunds at Rupees 7 per garce up to 1871 and Rupees 8 since. The total cost at these rates would be Rupees 72,919 or 11-6 pies per maund for a distance of 30 miles. The cost in Tinnevely is brought down by a quite inadequate provision for establishments, especially police, and by small outlay on works. We noticed on our visit that, from the weakness of the salt police, the guarding must be only nominal. The cause of the very low rate for police in Malabar is that no police at all were employed in that district up to 1872-3, and even now their function is not to guard the salt in the depôts but to check the issue of it by the subordinates of the revenue department. The charge for establishment in this district is also low, because no salt Deputy Collector was employed there during the period in question.

415. An addition ought, perhaps, to be made to the sums actually drawn in salaries by the salt establishments, to cover the contingent liability for pensionary allowances. Such charge, at the prescribed rate has been included by the Inspector-General in the cost of the police. But we have no data on which to calculate the addition necessary, on account of the revenue establishments. The rates, 20 per cent. and 12 per cent. without absentee allowances, which under the Pension Code have to be contributed on account of Government officers lent to native states and other authorities, were probably computed for officers of a very different class, and with reference to much higher liabilities than accrue in the case of salt servants, most of whom are menials entitled to claim only inferior pensions after very prolonged service. Probably 8 per cent. would be a sufficient rate; and at this rate the total cost on the East Coast would be 3 annas 6-1 pies instead of 3 annas 5-3 pies; and the excise proper, Rupee 1-12-5-9 instead of Rupee 1-12-6-4.

416. By a self-supporting system of excise we understand to be meant a system under which no charges will fall upon the state other than those incurred for prevention of illicit manufacture and protection of the revenue beyond the limits of licensed works, so that all charges incurred in the realization of the revenue at the works would be recovered, and the full excise determined on would be then realized. But it will be seen hereafter that we are of opinion that, if an excise system is introduced, it will be impracticable to levy these charges direct from the manufacturers, and that the recovery must be made from the purchasers at the time the salt is sold, in the shape of an average sum to be added to the net excise and either incorporated with it, or levied as an additional cess. If the former course be followed, it becomes apparent that the question whether an excise system is self-supporting or not, is simply a question what net rate of excise is decided on. The system would be self-supporting at the net rate, but not at the gross. In any case, it would be necessary to settle the addition to be made to the excise rate, and therefore some analysis of the items of present cost into those which it would be left to the manufacturer to settle at such rates as would remunerate him, and those which would determine the addition to be made in some shape to the excise, is desirable.

417. The first, second and fourth items in Statement B, Part I, Appendix D, together with interest on value of stock, and cost of storage, (which, as has been explained, we have hitherto been unable to isolate), would

* The salt is here partly carried by the ryots themselves.

fall under the first class, and the remainder, except perhaps "sundry works," and the charges for conveyance of salt and of the French supply, would be those determining the sum to be levied in addition to the excise. Taking the East Coast by itself, the first, second and fourth items come to 1 anna 7-5 pies, spontaneous salt being excluded. Interest on stock is 1-2 pies per maund.

418. The cost of storage is a much more difficult question. We must have recourse for information on it to the Collectors' returns of cost; but these are unsatisfactory, as, in Tanjore for instance, no separate charges are incurred under this head, the cost being included either in the kudiavaram or in the rates paid for transport of salt to Negapatam. In other districts and divisions also, the cost of storage is included in the kudiavaram, and the ryots render customary assistance in the work without payment. The figures, however, such as they are, are as follows, for ten Fasli years ending 1284:—

Districts.	Quantity stored.	Charges of storage.	Rate per maund.
	Indian Mds.	Rs.	Pies.
Ganjam	8,742,262	58,179	2-6
Vizagapatam	2,677,835	16,755	1-9
Godavery	2,859,320	12,012	-8
Kistna	5,319,931	21,344	-8
Nellore	6,355,061	22,270	-7
Chingleput	18,615,935	2,02,697	2-3
South Arcot	3,485,865	12,653	-7
Madura	3,274,348	10,524	-6
Tinnevely	5,249,912	12,953	-5
	54,241,627	3,92,306	1-4

The items given in the Collectors' returns are, "value of straw," "cookies for thatching," "coir rope, baskets, &c.," and "sundries." In Ganjam the bulk of the charges appears under the last head, so that it is impossible to say to what the high rate in that district is due. In Chingleput it is due to labour employed at Madras and Home's Gardens.† Excluding these two districts the average rate is 7 pies per maund. An addition must be made on account of storage works. It would not be worth while to take out separately the outlay on platforms, because much of it, how much it is impossible to say, has been incurred for the purpose of fencing them and making them secure against theft and fraudulent removal of salt, which are revenue purposes. On the whole, the cost of storage may perhaps be estimated at 2-2 pies per maund, and at this rate, the items under monopoly representing manufacturers' price would be 1 anna 10-9 pies.

419. It is doubtful whether under an excise the charge for general supervision which we have made, would enter into the sum to be recovered in addition to excise. Some charge would be made if a special salt department were constituted, but probably not otherwise. Excluding this item, the charge for realization of the revenue would be made up of those for establishment, contingencies, police, the cost of weighing-machines, and the balance of revenue and storage works. The miscellaneous charges, except those for the French supply to be incurred as a state charge under any system, the cost of weighing-machines, and the outlay on sundry works, would form no concern of Government under excise. They consist, besides the items just mentioned, of charges for storage, which would be the concern of manufacturers, and of conveyance of salt, &c., which would cease under excise. No estimate can be made of the cost of weighing-machines. The entries in the Accountant-General's books, which include

* Pondraun excluded. The Collector confines his return to manufactured salt.

	Rs.
† Value of straw	67,601
Cookies	1,27,760
Coir rope, &c.	6,723
	2,02,087

this item, occur only since 1871-2 and amount to Rupees 30,309. Those in the Collectors' returns amount under cost of machines to Rupees 26,372, and under repairs to Rupees 13,473, total Rupees 39,845, which gives $\frac{1}{3}$ pie per maund of salt. No entries under cost of machines occur in 4 districts, and the figures are altogether untrustworthy. The other items above mentioned come to 1-1-9 pies per maund.* But the past experience of the monopoly is an unsafe guide, for the establishments and police ought, whether excise be introduced or not, to be considerably increased. Probably we shall be safe in saying that 2 annas per maund in addition to excise would cover all charges. Taking establishment, police, and contingencies to represent the cost of realizing the revenue, we have the following rates, which are certainly low, in comparison with the gross revenue realized.

Districts.	Gross realized thous. 10 years	Establish- ment, police, contingenc- ies.	Per cent.
Ganjam	Rs. 1,46,33,332	Rs. 4,32,531	3-01
Vizagapatam	29,12,429	2,22,413	7-26
Godavery	50,59,653	2,00,768	3-97
Kistna	1,13,57,598	3,43,310	3-04
Nellore	1,17,77,352	3,37,554	4-56
Chingleput	2,13,11,472	8,66,777	3-57
South Arcot	61,59,511	2,93,079	4-76
Tanjore	1,21,22,521	4,34,978	4-00
Madura	59,98,101	2,56,335	4-24
Tinnevely	85,14,260	2,59,151	2-79
East Coast	10,34,41,365	39,14,794	~ 70
Malabar	97,96,566	72,777	9-74
South Canara	57,32,243	3,04,203	5-30
West Coast	1,55,29,440	3,77,049	2-43
Whole Presidency	11,85,71,314	42,91,834	3-61

420. Before proceeding to note the other charges, not connected with the monopoly system or entering into the cost of the monopoly salt, but which it is proper to set against the gross revenue, we must particularly investigate two questions, viz.—

Loss by export and discount systems.

- (1) whether the rates sanctioned for salt exported by sea entail loss or not;—
- (2) whether the grant of discount at 5 per cent. on wholesale sales entails loss of revenue, besides the prime cost of the salt, if any, given away in discount. This prime cost has been in the above calculations already thrown upon the revenue-paying salt by deduction of the discount quantities before computing the average rates.

421. First as to exported salt. Prior to 1st April 1868 the charge was a uniform one of 18 Rs. per garce or Rs. 0-2-4-8 per maund free on board; i. e., the Government bore all shipping charges, which appear duly debited in the accounts to the extent of Rs. 1,08,696 from 1865-66 to 1868-69. On the discovery that under these arrangements the salt was given for less than the cost, the new rates, which will be stated presently, were ordered to be introduced from 1st April 1868. Had this been done at once, there would be no entries for shipping charges, or perhaps only a very small sum for arrears, in the year 1868-69. On averaging the realizations on salt exported in 1868-69, it is apparent that the new rates were not introduced at the beginning of the year, but that they were very soon after. Hence the charges which appear in the accounts of 1868-69, must be mainly payments on account of salt shipped before April 1868.

* The balance of the whole cost, viz., 5-3 pies is made up of the charge for supervision and sundry works, the remainder of "miscellaneous" after deduction of storage charges, and the correction on account of cost of spontaneous salt.

422. The following table shows the disbursements on account of shipping charges in the first four years, the total quantity exported in 1865-6, 1866-7, and 1867-8, on which the charges were incurred, and the resulting average net rate per maund received for the salt:—

Districts.	Shipping charges paid.					Quantity exported 1865-6 to 1867-8.	Rate of shipping charges per maund.	Net rate received per maund.	
	1865-6.	1866-7.	1867-8.	1868-9.	Total.				
	Rs.	Rs.	Rs.	Rs.	Rs.	Mds.	A. P.	A. P.	
Godavery	1,775	1,552	...	...	3,327	88,369	0 7-7	+1 9-1	
Kistna	...	41	...	...	41	...	...	...	
Nellore	1,351	514	...	37	1,902	141,327	0 2-5	+2 2-3	
Chingleput	21,819	13,748	3,278	509	40,054	1,098,947	0 7	+1 9-8	
South Arcot	3,874	6,067	5,224	5,852	24,017	111,300	3 5-7	-1 0-9	
Tanjore	4,700	3,360	7,745	7,468	23,273	184,500	2 0	+0 4-8	
Madura	159	...	...	...	159	3,600	3 7-3	-1 2-5	
Tinnevely	14,735	674	454	...	15,863	353,900	0 8-5	+1 8-3	
Total	51,473	25,956	17,401	13,866	1,08,696	1,987,874	1 1-5	+1 3-3	

Thus in South Arcot and Madura it would seem that, if the figures are to be depended on, the salt was not only given away, but Government actually suffered loss in supplying it. On the whole, the net receipts would not have covered the prime cost of the salt.

423. The matter attracted attention in January 1866, and the Board, in obedience to a suggestion from Government that exporters should be required to make their own arrangements for shipping and be charged such rates as would cover the full cost of the salt, submitted a memorandum by Mr. T. Clarke, in which he computed the actual cost per maund of the salt at each place of export, including revenue charges as well as prime cost, and arrived at certain rates which he proposed should be charged, in order to carry out the objects in view.

Districts.	Divisions.	Per garce.			Per maund.	
		Rs.	A.	P.	A.	P.
Ganjam	Nowpada	13	0	0	1	8-8
Vizagapatam	Konada	18	6	0	2	5-4
Godavery	Balacheruvu	23	6	0	3	1-4
Godavery	Pennuguduru, (Karapa)	17	0	0	2	3-2
Kistna	Nizamapatam	11	8	0	1	6-4
Nellore	Iskapalli	13	0	0	1	8-8
Chingleput	Manora	20	0	0	2	8
Chingleput	Madras	20	0	0	2	8
Chingleput	Covelong	16	8	0	2	2-4
South Arcot	Merknam	15	0	0	2	0
Tanjore	Nagapatam	18	8	0	1	8-8
Tanjore	Kattamavadi	14	4	0	1	10-8
Tinnevely	Tuticorin	13	0	0	1	8-8

Correspondence, which was not finally closed till 1868, ensued as to the places at which a supply of salt for export should be provided, though export was to be allowed from other places when stocks permitted. In 1869, Nowpada in Ganjam, and in 1876, Konada and Balacheruvu in Vizagapatam were added and the schedule of export rates now stands as in the margin. Mr. Clarke's calculations were based on the figures for five Fasli years ending 1273 (1863-64) or before the introduction of the revised establishments, and this fact, as well as the great increase which has since taken place in the outlay on works, &c., makes his rates quite inapplicable either to the present time, or to the time at which they were introduced, five years after the expiration of the period on the results of which they were calculated.

424. In order to estimate the loss which has arisen on salt exported both before and since Mr. Clarke's rates were introduced, it is necessary to take out the cost of salt at the places named. We cannot expect more than an approximation to the loss by export, and it will suffice to base rates on the results of the last ten years. The only materials for the calculation of cost for particular divisions are the Collectors' returns, which have been already referred to, and the following statement, shewing the cost at the several places specified in the export list,* is based upon them. They seem tolerably accurate for establishment charges, as the district totals for the ten years

* With the addition of Ganjam, the cost at which division is required for a special purpose.

nearly correspond with the Accountant General's. They shew the station establishments separately and distribute the cost of the Deputy Collectors and their establishments rateably with reference to manufacture. As regards contingencies and storage charges, we have no choice but to accept them. For police, the district totals are generally about 30 per cent. lower than those given by the Inspector-General, a difference which no doubt arises from the Collectors not having included some or any charges over and above salaries, such as clothing, pensions, supervision, &c. We have, therefore, raised the charges entered by Collectors on account of police at particular stations in the proportion which their district totals bear to the Inspector-General's. At Madras and Covelong, we have had to enter sums at the average rate of police charge per maund arrived at for the whole district, as the Collector has given no figures. We have had to do the same for Nizampatam, but it will be seen that no exports have taken place thence. As regards works, we have, wherever we are in possession of detailed lists, picked out those belonging to particular divisions; in a few cases we have to use the entries in the Collectors' returns. The interest has been computed just as in the district calculations. Under wastage we have omitted 111,803 maunds of old stock destroyed at Iskapalli as unsaleable in Fasli 1277. It seems unfair to charge this against the current salt. To include and deduct it would make the cost at that division over 4 Rs. a maund.

Cost of salt at certain works for 10 years ending Fasli 1284 (1874-5)

	Ganjana.	Kowpada.	Kanada.	Balasore.	Vedaranyam.	Nizampatam.	Iskapalli.	Madras & Covelong.	Madras & Covelong.	Madras & Covelong.	Tuticorin.
	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
Quantity stored	1,945,235	3,056,376	166,187	482,314	2,760,330	1,151,333	145,042	13,123,803	1,943,223	2,492,561	888,788
Deduct wastage	56,084	104,357	6,749	59,117	193,088	39,774	17,297	344,630	53,719	212,323	53,091
" discount	11,040	67,150	180	760	4,335	22,185	650	493,253	...	...	12,335
Total deduction	77,124	171,507	6,929	49,897	197,423	61,959	17,947	838,192	58,759	242,322	65,426
Net quantity	1,567,115	2,585,869	159,258	432,417	2,562,907	1,089,374	127,095	12,385,611	1,884,464	2,250,239	823,362
CHARGES.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Land	4,093	...	79	1,190	3,000	...	100	480	...	210	...
Kudivaram	1,76,078	1,96,961	12,374	34,979	2,29,958	88,341	10,907	12,35,348	1,79,830	2,50,717	66,131
Storage	11,550	42,183	839	2,510	11,617	3,617	203	1,78,263	34,085	9,931	2,053
Conveyance	...	...	...	...	...	...	...	3,82,840	28,825	...	...
Establishment	51,041	72,757	9,331	27,765	23,878	45,251	27,262	3,37,683	30,793	82,931	13,792
Contingencies	5,831	6,901	329	1,623	5,817	1,368	675	56,946	5,854	4,309	1,442
Police	53,850	65,268	7,420	25,292	92,550	23,376	5,317	3,35,595	50,956	33,230	8,343
Works--interest	9,422	12,923	770	868	1,255	321	651	72,192	6,970	12,690	773
" repairs	15,231	15,155	1,758	12,930	17,956	2,418	10,347	2,07,520	8,698	21,107	1,080
	3,83,139	4,06,148	27,425	1,07,254	4,56,077	1,76,421	55,544	29,11,290	3,45,113	4,64,855	99,624
Per maund	2 10 2	2 4 5	3 4 1	3 11 6	2 10 7	2 6 2	6 11 5	3 7 3	2 11 2	3 3 4	1 11 2
Interest on stock	0 1 2	0 1 7	0 1 5	0 1 5	0 1 7	0 6 5	0 0 9	0 2 0	0 1 3	0 1 2	0 1 7
General supervision	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3
Total per maund	3 2 5	2 8 5	3 8 7	4 4 2	3 2	2 10 1	7 3 7	4 0 0	3 5 5	3 7 5	2 3 2

425. The cost of the salt at Negapatam and Vedaranyam cannot be exhibited in this form. The calculation is complicated by the fact that there are three kinds of salt on sale at Negapatam, viz., salt manufactured at that place, salt manufactured at Vedaranyam, and spontaneous salt collected there. Up to Fasli 1277 (1867-8), some manufactured salt was sold at Vedaranyam, but since that time the whole quantity made there has been brought to account at Negapatam, whither it is transported at the ryots' risk by the canal. The only salt since sold at Vedaranyam has been the spontaneous salt, and a considerable quantity of this salt has also been sent to Negapatam. We cannot attempt to separate the cost of the manufactured salt sold at Vedaranyam in the first two years of the series; but it is necessary to shew separately the cost of the three kinds on sale at Negapatam. That sent from Vedaranyam has to bear, in addition to the prime cost and the cost of transport, a share of the charges for establishment, police, &c., and works incurred at Vedaranyam. It has also to be charged

Cost at Negapatam and Vedaranyam.

with the interest and cost of repairs of the Vedaranyam canal, which amount to Rupces 34,908 for the ten years. The Collector's returns shew nothing on account of storage either at Negapatam or Vedaranyam, because the kudivaram rates and payments for the collection of spontaneous salt include storage. The rates paid for the transport of the Vedaranyam salt to Negapatam include storage at the latter place.

426. To take the Vedaranyam salt first. The sundry charges per maund, to be borne by all the salt, whether retained or sent to Negapatam are got as follows:—

	Indian Maunds.
Quantity made and collected	1,978,909
Deduct wastage	50,921
" discount	78,600
Total deduction	129,521
Net quantity	1,849,388
Charges.	Rs.
Establishment	45,659
Contingencies	978
Police	31,475
Interest	4,098
Repairs	11,462
Total charges	93,672

Incidence per maund 0 0 9 8

The prime cost of the salt sold at Vedaranyam is thus got:

	I. Mds.
Quantity made and collected	1,017,157
Gain by weightment	43,323
Total	1,060,480

Deduct wastage 50,921
" discount 78,600

Total deduction 129,521

Net quantity 930,962

Payment for salt.

	Mds.	Rs.
Manufactured	167,602*	17,107
Spontaneous	328,043	23,552
	204,820	8,381
	16,492	987
		50,027

Rate per maund 0 0 10 4
Establishment, &c., as above 0 0 9 8
Interest on value of stock 0 9
General supervision 3

0 2 0 1

The kudivaram on the manufactured salt is that given by the Collector.

The rate paid for spontaneous salt was, up to 1873, Rs. 4-8-0 according to Dr. Ration, but according to details noted by us at the place Rs. 4-4-0 per garce; we have, however, taken the higher rate. In 1873, when a large collection was made, the rate was raised as shewn in the margin, and in 1874 the first item was raised to Rs. 3. None of this salt had up to the end of 1874-5 passed into consumption or been sent to Negapatam. From Fasli 1277 (1867-8) to Fasli 1282 (1872-3), the rate of transport for both

* Up to Fasli 1277.

kinds of salt was Rs. 7, which included unloading and storing at Negapatam; but the rate was raised to Rs. 8 for Fasli years 1282 and 1284. The quantities sent to Negapatam are as follows:—

	Manufactured. Ind. Mds.	Spontaneous. Ind. Mds.	Total. Ind. Mds.
Fasli 1277	24,000	56,835	80,835
" 1278	32,780	144,151	176,931
" 1279	158,477	38,639	197,110
" 1280	77,234	47,082	124,366
" 1281	120,045	50,757	170,802
" 1282	32,605	74,341	107,006
" 1283	167,602	.....	167,602
" 1284	180,717	.....	180,717
	793,570	411,700*	1,205,269

and the cost of carriage, &c., was as follows:—

	Rs.
Manufactured salt	48,002
Spontaneous salt	24,917
	72,919

to which must be added Rs. 34,908 on account of the canal, a sum which is debitable in the proportion of Rs. 22,973 to the manufactured, and Rs. 11,935 to the spontaneous salt.

427. The cost of the several kinds of salt at Negapatam is then as follows:—

	Manufactured.	Spontaneous.	Total.
	Maunds.	Maunds.	Maunds.
Gross quantity	2,325,083†	411,700	2,736,882
Deduct wastage†	2,013	25,211	27,224
„ discount	113,400	.....	113,400
	115,413	25,211	140,624
Net quantity	2,209,670	386,588	2,596,258
Charges—	Rs.	Rs.	Rs.
Kudivaram, &c., Negapatam salt	1,59,371	.....	1,59,371
Do. and prime cost, Vedaranyam salt	85,479	15,443	1,00,922
Transit charges, do.	48,002	24,917	72,919
Canal,	22,973	11,935	34,908
Establishment, &c., Vedaranyam	40,470	21,019	61,489
	3,50,595	73,314	4,29,909
Per maund—			
Negapatam salt	Rs. 0-1-9-1	.....	.....
Vedaranyam salt	„ 0-4-1-5	.....	.....
Both	„ 0-2-7	„ 0-3-0	0-2-7-5
Establishment, Negapatam			66,806
Contingencies, do.			2,709
Police, do.			33,984
Works .. { Interest			9,764
Repairs			8,360
Per maund			1,31,623
			Rs. 0-0-9

* Of this quantity Indian Maunds 25,211 wasted in the transit, and is charged against the salt at Negapatam. The rate is 6-11 per cent.

† Viz., manufactured at Negapatam Indian Maunds 1,531,513 and at Vedaranyam Indian Maunds 793,570. The spontaneous salt is not saleable at Negapatam except for export and salt for export is not weighed out in Tanjore. We have therefore charged the wastage other than that in transit, and the discount, to the manufactured salt.

For calculation of interest, we cannot separate the manufactured and spontaneous salt; the rate is probably higher in the latter case, as the salt remains longer in store. The cost of the several kinds at Negapatam is then made up as follows:—

	Negapatam, manufactured.	Vedaranyam, manufactured.	Vedaranyam, spontaneous.	All salts.
Cost of salt	0-1-9-1	0-4-1-5	0-3-0	0-2-7-5
Establishment, &c.	9	9	9	9
Interest	1-4	1-4	1-4	1-4
General supervision	3	3	3	3
	0-2-10-5	0-5-2-9	0-4-1-4	0-3-3-9

428. The Vedaranyam spontaneous salt will in future cost on the spot Rs. 7-2-11 per garce, and a contract for carrying it from the place of storage to the boats, and for transit to Negapatam and storage there, at Rs. 9-11-2 per garce, has been entered into. Adding 6 per cent. for wastage, the cost at Negapatam will be Rs. 17-15-2 per garce or per maund Rs. 0-2-4-6. Adding again 9-8 pies for establishment at Vedaranyam, 9 pies for establishment at Negapatam, 1-4 pies for interest, 5-5 pies as canal charges and 3 pies for general supervision, we find the total cost to be 4 annas 9-3 pies per maund. The salt is to be sold at Negapatam at a special discount of 10 per cent. in addition to the ordinary discount, or for Rupee 1-11-2 per maund, as sanctioned in G. O., 31st March 1876, No. 450, Revenue Department. The arrangements were made under the idea that the spontaneous salt was cheaper and would therefore pay a higher excise than the manufactured salt; but the discount was calculated with a view to the merchants selling by measure at the same profit as the manufactured salt would yield them. The cost of the salt is only 5½ pies less; but with the discount of 10 per cent., (which is to be allowed on wholesale transactions over and above the usual 5 per cent. to cover wastage), the spontaneous salt will pay an excise of Re. 1-6-4-7, while the manufactured pays Re. 1-9-2-1 when sold wholesale. The latter is therefore the more profitable to Government. Yet when we visited Vedaranyam we found several thousand garce of it there which was a year old, and for which the ryots had not then been paid, while endeavours were being made to force the sale of the spontaneous salt at Negapatam.

429. No salt has ever been exported from Nizampatam or from stations in the Vizagapatam district. Small quantities have been exported from places other than those specified in the above list, *e. g.*, Killai, Gundalam, Vaipar, Manakodi, a station in Madura now closed, and the information furnished by the Collector is not sufficient to enable us to calculate the cost for Kattamavady. For these we shall use the district rates.

430. The following statement shows the loss on exports. As the statements of divisional transactions, whence the exports from each place are obtained are for Fasli years, we calculate the loss for ten Fasli, instead of ten official years.

Prior to change of rates—Fasli 1275—1277.						Since change of rate—Fasli 1278—1284.					
Division.	Net rate at which exported.	Correct cost.	Difference.	Number of maunds.	Loss.	Division.	Net rate at which exported.	Correct cost.	Difference.	Number of maunds.	Loss.
	A. P. A. P. A. P.	A. P. A. P. A. P.			Rs.		A. P. A. P. A. P.	A. P. A. P. A. P.			Rs.
Pennaguduru	1 9-1 3 2 1 4-9	88,000	7,823			Pennaguduru	2 3-2 3 2 1 10-6	80,635	9,598		
Iskappalli	2 2-3 7 3-7 5 1-4	142,279	45,530			Madras	2 3 3 0-3 1 4-9	418,076	36,527		
Madras	1 9-8 4 0-9 2 5-1	826,002	1,16,520			Cavelong	2 3-4 3 3-5 1 1-1	1,529,280	1,03,990		
Cavelong	1 9-8 3 3-5 1 5-7	217,079	20,041			Iskappalli	1 8-8 7 3-7 5 6-9	5,049	1,754		
Meekanam	1 0-9 3 7-6 4 3-5	94,500	27,783			Negapatam	1 9-6 4 1-4 2 3-3	184,400	28,147		
Killai	1 0-9 4 7-2 5 8-1	7,800	2,767			Vedaranyam	1 9-6 2 0-1 0 2-3	57,336	745		
Gundalam	1 0-9 4 7-2 5 8-1	3,000	1,064			Kattamavadi	1 10-8 3 3-5 1 4-7	3,600	316		
Vedaranyam	0 4-8 2 0-1 1 7-8	117,360	14,813			Tuticorin	1 8-8 2 3-2 0 6-4	204,780	6,758		
Kattamavadi	0 4-8 3 3-5 2 10-7	46,140	8,528								
Manakodi	1 2-5 3 4-2 4 0-7	3,600	1,022			Total, last 7 years	...	...	1 2-5	2,490,161	1,87,833
Vaipar	1 8-3 2 10-5 1 2-2	192,060	14,205			Total, first 3 years	...	...	2 2-4	1,938,340	2,66,041
Tuticorin	1 8-3 2 3-2 0 6-9	169,620	5,035			Total, 10 years	...	...	1 7-7	4,428,501	4,53,876
Total, first 3 years	...	...	2 2-4	1,938,340	2,66,041						

Thus the effect of the orders of 1868 was to reduce the loss on the average of exports from 2 annas 2·4 pies to 1 anna 2·5 pies; but the trade on the whole ten years has been carried on at a loss of 1 anna 7·7 pies per maund. Of this, however, 3 pies is the charge made for the supervision of the Board and Collectors which is perhaps an excessive charge, and the calculation is altogether somewhat high, the rates being taken from the experience of the whole period, during which the cost of salt was, if anything, rising while the exports took place chiefly in the first five years. The whole loss is approximately Rs. 4,53,876, which amounts to 1·3 pies per maund on the whole salt of the ten years in the Presidency.

431. We have now to examine what amount of revenue has been lost under the discount system. The discount of 5 per cent. on ordinary wholesale sales exceeds the ordinary wastage on the heaps sold, and the duty on the salt which thus passes into consumption is therefore lost. We have in a previous chapter analysed the wastage rates as given by the accounts and have pointed out that there must be loss of revenue by the grant of discount at least as great as is shewn by those figures. The loss is undoubtedly greater than is represented by those figures, as overstorage exists; but the extent to which it prevails we are unable to estimate. In the following statement, the ordinary wastage rates are applied to the quantities of salt sold wholesale; the number of maunds in excess or defect of the supposed out-turn which the trader receives; the value at the full monopoly price prevailing at the time the salt was sold; the cost at the rates worked out above; and the net duty lost or gained by Government, which is the difference between the value and cost, being shewn in the several columns:—

District.	Five years ending 1869-70.					
	Net whole- sale sales; i. e., stored in heaps less 5 per cent.	Out-turn of heaps on wastage rates.	Traders' gain or loss.	Value at full mono- poly prices.	Cost.	Net duty lost or gained.
	I. Mds.	I. Mds.	I. Mds.	Rs.	Rs.	Rs.
Ganjam	2,191,030	2,206,766	+ 15,636	26,306	2,377	- 24,129
Vizagapatam	60,420	61,832	+ 1,412	2,373	391	- 1,992
Godavery	19,380	18,972	- 408	733	72	+ 711
Kistna	1,267,450	1,192,950	- 74,490	24,534	2,297	+ 22,297
Nellore	1,027,254	1,087,915	+ 60,661	1,01,688	11,795	- 89,295
Chingleput	5,784,350	5,740,031	- 44,319	58,691	8,106	- 60,588
South Arcot	2,250	2,192	- 58	145	25	+ 125
Tanjore	2,259,800	2,316,152	+ 56,352	4,34,480	52,420	- 3,82,000
Madura	304,474	314,830	+ 10,356	17,682	1,960	- 15,622
Tinnevely	251,940	256,133	+ 4,193	6,980	630	- 6,300
East Coast	18,467,937	18,704,895	+ 236,958	1,12,375	34,399	- 4,45,626
Malabar	1,139,171	1,205,215	+ 66,044	1,12,375	34,399	- 78,175
Whole Presidency	14,547,108	14,910,111	+ 363,003	...	...	- 5,23,798
	Five years ending 1874-75.					
	I. Mds.	I. Mds.	I. Mds.	Rs.	Rs.	Rs.
Ganjam	877,800	877,450	- 350	740	56	+ 684
Vizagapatam	3,420	3,853	+ 433	134	19	+ 115
Godavery	44,460	44,362	- 98	106	17	+ 179
Kistna	1,876,573	1,866,215	- 10,358	21,316	2,006	+ 22,310
Nellore	974,264	982,249	+ 7,985	30,152	3,921	- 27,231
Chingleput	4,047,762	4,074,000	+ 26,238	52,696	6,126	- 47,570
South Arcot	2,370,060	2,453,670	+ 83,610	1,31,220	12,453	- 1,17,722
Tanjore	18,331	18,612	+ 281	562	53	- 509
Madura	234,870	227,237	- 7,633	4,734	379	- 4,355
East Coast	10,423,330	10,336,319	- 86,953	1,73,252	45,014	- 1,73,682
Malabar	1,710,913	1,737,339	+ 26,426	1,73,252	45,014	- 1,28,238
Whole Presidency	12,134,243	12,073,658	- 60,585	...	...	- 3,01,327

Thus according to these figures, no less than 413,315 Indian maunds passed into consumption duty-free in the first five years specified, and 196,808 in the second

five years.* In the first period Government suffered a net loss of Rupees 5,23,798, after deduction of gain in four districts, viz.:—Godavery and South Arcot, where the transactions were very small, Kistna and Chingleput. In Kistna the wholesale purchasers are banjaris, who might not perceive a loss of one per cent.; but the Chingleput traders would not be likely to tolerate one of 0·58 per cent. As regards these cases, either the wastage rates are not to be depended on, or we have included some special losses of which we have no information and which may have enhanced the wastage rate underlying our calculation. The loss of revenue in Tanjore appears to have been enormous in this first period; but on referring to the wastage statement it will be seen that the storage was very bad.

432. In the second period, there appears a gain of Rupees 23,310 in Kistna, and small gains in Ganjama, Vizagapatam and Godavery. All other districts which had wholesale transactions shew loss, amounting, in the net result, to Rs. 3,01,327. The whole net loss of revenue in the Presidency throughout the ten years is thus estimated at Rupees 8,25,125, of which Rupees 2,06,416 occurred in the district of Malabar, and Rupees 6,18,709 on the East Coast, including Rupees 4,99,722 in Tanjore, where the storage has always been the worst in the Presidency. The total loss is equivalent to 2·4 pies per maund on all the salt brought to sale in the ten years.

433. Besides the items discussed so far, there are certain other charges against the salt revenue which have now to be noticed. These are

(1) salt compensations and allowances debited to "allowances and assignments under treaties and engagements," which, according to the Accountant General, are as shewn in the margin, or for ten years Rs. 92,753-2-0. To these are to be added remissions of land revenue granted by way of compensation to holders of closed salt pans in South Canara, which for ten years have amounted to Rs. 31,209-7-2; and part of a payment of Rs. 6,468 annually to the trustees of the Vedaranyam pagoda "as subsidy for their right of manufacturing salt in the swamp and for the revenue in exports and imports of the sea custom-house at Toputorai which was formerly enjoyed by the trustees." This has been converted into a grant of land revenue, amounting, with the usual allowance of 10 per cent. added in such cases, to Rs. 7,115. Half of this may be taken as a salt charge and will give as the total under this head for ten years Rs. 1,59,542, which is equivalent to 0·5 pies per maund.

(2) the payments to the French Government under the conventions, which are 4 lakhs of Sicca Rupees and 4,000 Star Pagodas; equal to Company's Rupees 6,41,600. The charges on the supply viz.:—freight, &c., have already been included. The subventions are equivalent to a charge of 1 anna 3 pies per maund.

(3) the payments connected with salt made to the Governments of Travancore and Cochin under the customs convention of 1835. The payments on account of wastage of salt in transit up to 1874-75, are given above in Chapter III, and amount to Rs. 1,33,122. To this must be added the remission of duty at the rate of 9 pies per maund on salt shipped from Bombay works for Travancore and Cochin. We have not correct figures of these exports. But the Diwan of Travancore has given us a statement of the quantities landed in that State during the 6 years ending 1850 M.E. (= 1874-75 A.D.), which gives an average of 216,840 maunds per annum. If we assume the same rate of importation for the preceding 4 years we shall have for the decennial period 2,168,400 maunds as the Travancore imports. The Cochin imports are not shewn in any papers to which we have had access, but the sales (and hardly any other salt than Bombay salt is consumed) aggregate for the 10 years 796,268 maunds, and this figure may be taken nearly to represent the importations. Further must be

* These are the totals of the plus entries in Indian maunds.

added the deficiencies on imports which were 226,768 maunds. Adding then these figures together the total at 9 pias a maund gives Rs. 1,49,363. Thus the total payments connected with salt on account of the convention with Travancore and Cochin amounted during the ten years to Rupees 5,37,485 which is at the rate of 1·5 pias per maund.

434. We are expressly asked (question V in the Resolution of the Government of India) whether the system under which Government now obtains its salt is in any respect needlessly costly. So far as the administrative management is concerned, this is certainly not the case. The establishments and guards are on the lowest possible scale, and it appears to us, as will be seen from what we have said upon the subject elsewhere, that an increase is urgently required and would result in increased revenue. But as regards the mere obtaining a supply of salt, economy would doubtless result from closing some of the smaller works, as the outlay incurred upon them enhances the general average of cost very considerably. The examination which we have made of the cost in different localities comprises a few of the smaller works and from these, as well as from the average cost in those districts in which the transactions in salt are small, it will be seen that the average cost decreases remarkably in proportion as the quantity of salt dealt with increases. The existence of these small works also enhances the cost in the larger ones, by drawing demand away from them, whence it results that many of them are not worked up to their full power. Their transactions are thus restricted and the kudivaram rates tend to become higher than they otherwise would be, as the manufacturers must receive higher inducements to embark in a business so fluctuating and uncertain. The subject is discussed in Chapter III, supra.

435. This is the most important point in respect of which economy might be effected in the cost of salt, but there are one or two others. We have noticed in the historical chapter the gradual development of the kudivaram rates, and we think that, though some increase must have followed necessarily in consequence of increase in wages and prices, yet in many cases they have been raised beyond what necessity required. We shall attempt, in connection with the question of introduction of excise, some estimate of the profits now made by the manufacturers, and we think that these profits would suffer considerable diminution under the stress of competition, if excise were introduced. The order of 1862 already adverted to, whereby the ryots were formally relieved of the cost of all except the most petty works was equivalent to a very substantial enhancement of the kudivaram; and from that time, and since Mr. Clarke's deputation to the several districts, dates the rise of Government outlay on works, which has now become very great, being about two lakhs of Rupees a year. Most of this outlay was necessary and has doubtless proved remunerative by tending to the security of the revenue, but in some cases there has been extravagance. The most notable instance seems to us the large outlay on channels to facilitate the removal of salt from the pans which supply the Madras depot. Nearly 40 miles of navigable channels exist there, and since 1865-66, Rs. 1,16,763 have been spent in new works of this class. The clearance of silt from these channels costs about 30,000 Rupees a year. But, judging from results, they do not appear to have much increased the production of the works in question, as will be seen from the marginally noted figures, nor to have materially cheapened transport, which was 4·7 pias per maund in Fashi 1275, and 4·2 pias per maund in Fashi 1284.* They have operated simply to make it easier for the ryots to get brine to their pans, and to reduce the distance they have to carry their salt to the boats, which amounts to an increase of the kudivaram. This was itself raised from Rs. 10·9·7 to Rs. 12 during this period.

	L. Mds.
Out-turn, Fashi 1275.....	1,651,031
" " 1276.....	2,100,593
" " 1277.....	1,523,201
" " 1284.....	785,151
Average 5 years ending Fashi 1284.....	1,811,990

* It was however less in the interim, for the average boat-hire for the whole period was 3 pias. Vide supra.

436. The system under which money is allotted for works is not a good one, or such as tends to the most economical application of the grant for the purpose. Each Collector sends up a list of works which he desires to have undertaken; and, as the aggregate is generally far in excess of the money likely to be made available, a selection is made in the Board's office, and a list of grants drawn up. The selection, it will be easily understood, is not made with the fullest knowledge, and proposals for transfers of grants are very frequent. Chingleput has had the bulk of the outlay. Since the introduction of the budget grants for petty construction and repairs, Rs. 3,81,802 out of a total of Rs. 12,60,938 to the end of 1874-75 have been spent in the Chingleput divisions. Under a single head of the department, who would deal with applications for money with knowledge (gained on tours) of local wants and their relative urgency, extravagance in outlay on works would be less likely to occur. Under the present system the amount allotted to a district depends very much on what the Collector asks for.

437. At the time Mr. Plowden reported, and for some years afterwards, the usual estimate of the cost of Madras salt was two annas a maund, but of recent years it has generally been stated at three annas. These estimates were obtained by dividing the charges debited to salt by the number of maunds made, and the increase in the recent estimates is due to the gradual increase of kudivaram, the introduction of a revised scale of establishment, and increased outlay on works.

438. The whole charges of every kind which we have brought against the salt in the present chapter may be summed up as follows, for the ten years ending 1874-75.

	Per Maund.		
	RS.	A.	P.
Cost of salt proper, including establishment, supervision, and pensionary liability	0	3	6·1
Loss on exportation	0	0	1·3
Discount system	0	0	2·4
Compensation and allowances	0	0	0·5
French subventions	0	1	0·8
Chargeable under the Travancore and Cochin conventions	0	0	1·5
	0	5	0·6

439. In order to see whether the cost of salt is materially increasing, we have deemed it advisable to take out separately the totals for the East Coast for the five years ending 1874-5 and for 1874-5 itself. These will be found, with the quantities of salt involved, in the last two columns of Statement B in Part I, Appendix D. The resulting averages are given in the margin, in contrast with those for the ten years. It must be stated, however, that it is only the items kudivaram and works which, by their increase represent any real increase of charge. The enhancement of the averages during the recent period is almost entirely attributable to the decreased quantities produced, owing to adverse seasons, of which three occurred during the five years. The average manufacture during the five years was only 5,722,003 maunds against

	Ten years ending 1874-5.	Five years ending 1874-5.	1874-5.
	A. P.	A. P.	A. P.
Land assessment	0 0·1	0 0·1	0 0·1
Kudivaram	1 5·7	1 6·1	1 6·7
Works for salt manufacture	0 1·5	0 2·0	0 2·4
Establishment	0 6·5	0 6·0	0 8·3
Contingencies	0 0·6	0 1·0	0 1·4
Police	0 5·5	0 6·3	0 7·3
Miscellaneous	0 5·5	0 3·8	0 4·6
Works for storage and revenue purposes	0 1·0	0 1·5	0 2·3
Sundry works, &c.	0 0·5	0 0·5	0 0·3
Interest	0 1·2	0 1·1	0 1·4
General supervision	0 3·0	0 3·0	0 3·0
Pensionary liability	0 0·5	0 0·6	0 0·7
	3 5·9	3 9·3	2 2·2

6,432,911 in the previous five years. In 1874-5 it was only 5,053,873 maunds, and that year closed with a balance of 3,994,488 maunds, against an average for the whole ten years of 6,001,652 maunds. In 1875-6, however, upwards of 97 lakhs of maunds were stored, and assuming charges for that year the same as in 1874-5, the average cost per maund including all items above stated would be under 2½ annas.

CHAPTER VI.—CONSUMPTION.

440. We are specifically called on by the 4th of the questions referred to us to consider the rate of consumption of salt in the Madras Presidency. The passage runs as follows:—"The commission should collect information regarding the distribution of salt, the cost of carriage to different parts of the Presidency and the amount of such salt which is exported to other parts of British India and to Native States; and give their opinion as to the average annual consumption of salt per head in the Madras Presidency."

441. It may be useful, in the first place, to bring together in a brief review the estimates of consumption already put forward from time to time, by the Board and other authorities. In 1799 the Board estimated the population of the districts then under their control at 10 millions, and the consumption of salt at 12 lbs. per head per annum. This appears to have been conjectural merely. Mr. Falconar in 1804 while citing a native estimate of 12 *seers*, condemned even the Board's estimate of 12 lbs. as being too high and assumed 9 lbs. as nearer the Bengal assumption of 9 lbs. In the discussions of 1848-50 the consumption per head, variously estimated by Collectors, was put by the Board at "6 measures (about 12 lbs)." The population was assumed at 20 millions. Mr. Bayley, however, in adopting this estimate of consumption says that it is not asserted that this amount is actually consumed, but that it *would be* consumed, if prices were no hindrance. He gives the following estimates of Collectors:—

Ganjam...	...	14½ lbs.
Nellore ...	...	18 "
Chingleput ...	...	21 "
South Arcot ...	...	above 16 "
Malabar ...	...	12½ "

The following are also given by Mr. Bayley as the results of dividing "home sales" by population. But he warns us that salt was sold by retail in the maritime districts under *inland* *rawanahs*, and that there were other disturbing causes:—

Vizagapatam ...	...	3 lbs.
Guntoor ...	...	13½ "
Chingleput ...	...	4 "
South Arcot ...	...	4½ "
Rajahmundry ...	...	14 "
Masulipatam ...	...	8 "
Nellore ...	...	17 "
Tanjore ...	...	21½ "
Madura ...	...	13½ "
Canara ...	...	16 "

"A former Collector of South Arcot whose attention was much given to this branch of revenue calculated the consumption at 25 lbs." A Collector of Tanjore gave 23½ lbs., and the Pondicherry consumption was estimated at 24 lbs. per head. Mr. Bayley notes that a sepoy on foreign service, when rations are allowed him, gets 12 drachms of salt a day = 17 lbs. per annum. On board ship he gets one ounce per diem, equivalent to 22½ lbs. a year. On the whole, therefore, Mr. Bayley concludes that 18 lbs. would be the maximum consumption per head if salt was from its price within the reach of all who needed it; but for safety he estimates the

consumption at 15 lbs., as the natives consulted did not probably make sufficient allowance for infants and paupers and looked more to adults' consumption. Mr. Plowden considered this estimate excessive and thought 12 lbs. a full allowance. Sir Thomas Munro's highest estimate gave 9 lbs., and in the Bombay jails 7 lbs. was found a sufficient allowance.

442. In August 1866 the Board submitted a minute by Mr. Clarke, in which, among other things, the question of consumption was considered. Mr. Clarke affirmed that in the 13 years 1850-51 to 1863-64, while the population had increased 10½ per cent., the total salt sales had risen nearly 44 per cent., and consumption increased from 15½ to 17½ lbs. per head. Taking his figures for the last date only, we shall find that he works on the following assumptions:—

Population of Presidency in 1861-62.....	24,656,509 souls.
Total sales in 1863-64 exclusive of exports by sea and sales to French Government.....	6,394,257 maunds.
Of which exported by land beyond Presidency.....	1,129,556 "
Balance consumed within Presidency.....	5,264,921 "

The figures are not put forth as absolutely correct. It is not stated how the exports by land into foreign territory are arrived at, probably from the declarations of traders only, which are not a safe guide. Moreover the census of 1871, which gave close on 32 millions, shews that an estimate of 24½ millions for 1861 was too small. Finally, instead of an average, the sales of a single year of exceptionally high sales were taken for the dividend. Indeed Government accepted these calculations with very many reservations.

443. In 1867, when the Government of India had been urging an enhancement of the Madras salt tax, the Board again considered the subject and gave the following figures, worked out on the same principle as Mr. Clarke's estimate. That is to say, from total sales were deducted exports by sea, sales to French Government, sales declared for export to foreign markets by land, and the remainder was divided by the population according to the latest so-called census. These calculations involve the very same sources of error as noticed above in regard to Mr. Clarke's estimate. The figures were as follow:—

Period.	Consumption per head.
1850-51 ...	13½ lbs.
Average of 1851-52 to 1855-56...	15½ "
1856-57 (new census) ...	13 "
Average of 5 years ending 1860-61 ...	15½ "
1861-62 ...	16½ "
1862-63 ...	16½ "
1863-64 ...	17½ "
1864-65 ...	18½ "
1865-66 ...	19 "
1866-67 ...	19 "

Taking the then populations at 26 millions, the Board estimated the consumption for 1867-68 at 18 lbs. They nevertheless admitted that the statistics of foreign sales were not trustworthy, and therefore attacked the problem in another way. Taking the population of the Central Provinces at 9 millions, that of Mysore at 5 millions and of Hyderabad at 10 millions, they assumed that 10 millions of the inhabitants of these provinces ate Madras salt and thus got at a total population of 36 (26+10) millions consuming the total salt sold otherwise than for export by sea and to the French Government. This would give a consumption of 16 lbs. per head all round. Another mode of calculation is this; from total sales, (*minus* of course sales for export and to the French), subtract *all* salt declared for *inland* (i. e., other districts), consumption in Ganjam, Vizagapatam, Godavery, Kistna, Nellore, South Canara and Malabar, and one-third of salt sold at the Madras depôts. This gives lbs. 191,160,246 for foreign consumption, leaving 384,503,205 lbs. for consumption of the supposed 26 millions, or 14 lbs. per head. But the actual population when this calculation was made was probably at least 30½ millions; a correction on this account would therefore reduce consumption thus estimated to about 12½ lbs. The Board admitted that the estimates were not trustworthy.

444. In 1869 Government again asked the Board whether the tax could be raised without checking consumption. The Board recorded minutes in the negative, but they chiefly relied on the statistics already given by them and abstracted above. A statement, seemingly by Mr. Carmichael, is, however, quoted with approval in the minute of the acting second member, wherein the consumption of Vizagapatam is put down at 6 lbs., and that of Ganjam at from 8 lbs. to 10 lbs. per head. It is not shewn how these estimates were arrived at.

445. It was impossible, at the dates when these various estimates were made, to arrive at anything approaching to certainty, for one of the two elements in the calculation, the number of consumers, could only be guessed at. The census has given us, at any rate, an approximation to the value of that factor, and the question can now be discussed with perhaps better hope of success.

446. In Mr. Hume's letter, No. 190, dated 12th June 1875, to the address of the Government of Madras, with reference to the assertion that "each increase in the price of salt in Madras has been accompanied by a diminution in consumption," the following method of attacking the problem is suggested:—

"This assertion, the Governor General in Council believes, has frequently been made when the question of raising the salt duty in Madras has been under consideration, and it appears very desirable to test thoroughly its foundation."

"To this end His Excellency in Council would wish to be furnished with a statement showing for each of the last 30 years the rate of duty and the total sales of salt in Madras for home consumption. From the total salt sales recorded should of course be deducted all amounts declared for export to Mysore, Coorg, Travancore, Cochin, the Nizam's territories, the Central Provinces and the Tributary Mehals, and the amounts declared for home consumption only should be entered."

"But, further, I am to enquire whether there are good grounds, (and if so, what grounds), for believing that no material proportion of the salt declared for home consumption is, after being so declared, exported, being re-sold at up-country marts to traders. I am to invite attention to the special importance of this point as bearing upon the rate of consumption per head which is usually assumed for Madras—a rate largely in excess, not only of that prevailing in the entire Bengal Presidency where the duty is higher than in Madras, but also of that ascertained by the latest and most careful enquiries for Bombay, where the rate of duty is the same and the original cost of the salt less."

"The Government of India desire that it may be considered by His Excellency the Governor in Council whether, assuming a consumption of only 10 lbs. per head for the extra-Madras population partly or wholly supplied from Madras, and allowing for the amount of salt known to be furnished from Bombay and obtained from petty earth-workings in the southern parts of the Nizam's territory and in Chittledroog and other taluks in Mysore, it will not be found that much larger quantities of salt must be exported to these territories from Madras than are declared at the sales to be for export."

"The bearing of this question upon the alleged diminution of consumption is obvious, since, so far as His Excellency in Council is at present informed, the central portion of the Peninsula has drawn its supplies in fluctuating proportions from both the east and west coasts, now increasing its demands on one and now on the other side, as communications were improved and articles of trade which form the exchange for salt found a readier sale on this or that side. Consequently, unless good and substantial reasons exist for believing that no material portion of the sales declared for home consumption really leaves the Madras Presidency, the Madras figures afford no valid data either for calculating the rate per head of consumption, or for concluding that any increase of duty has diminished consumption. The only way to arrive at a correct conclusion on these points would appear to be to add together for each year the total sales of Bombay (excluding Sindh) and Madras, and, deducting from them the amounts sent to the Central Provinces, to deduce thence the yearly consumption of duty-paid salt in the Peninsula."

"If this is done, the Governor General in Council believes that, in spite of the continuous increase of duty and the fact that till recently smuggling was rife in the Bombay Presidency, it may be found that the steady increase in consumption has been greater than can be accounted for by any rate of increase of population hitherto assumed for peninsular India, and

that if the total thus obtained be divided by the total of the population of Bombay, Madras, and the adjacent Native States, certainly supplied almost exclusively from one or other Presidency, the rate of consumption per head may be found to be much lower than has hitherto been assumed for Madras, and possibly nearer that which is now estimated for the Bombay Presidency, viz., 10 lbs. per head."

447. In order to answer the question as thus posed, returns were called for from Collectors by the Board of Revenue, and the replies have been handed over to us. They are, however, incomplete, and do not afford the means of compiling a table even of estimated exports of Madras salt beyond the limits of the Presidency for 30 years, while the estimates for those years in which they are complete are so manifestly conjectural that it would be unsafe to build on them.

448. For such a long series of years, failing a trustworthy estimate of exports, it would doubtless be necessary to fall back on a larger area, as suggested in Mr. Hume's letter; but we think that by confining ourselves to a shorter period, we can arrive at some approximation to the present rate of consumption, though even here we shall not be altogether able to exclude non-British territory from the estimate. Except then in certain special cases, to be noticed below, where conditions have materially altered during the period, we shall take the average annual sales of the 5 years 1870-71 to 1874-75 as indicating the average annual consumption of the tracts wholly or partly supplied with salt from Madras works or depôts, or with salt imported by sea through Madras custom-houses by private traders. Those regions are—

1. the Madras Presidency, including the feudatory states of Pudukottai, Banganapalli, and Sundur;—
2. Mysore and Coorg;—
3. the Nizam's territories;—
4. a portion of the Central Provinces;—
5. a portion of Chota Nagpore and its Tributary Mehals;—
6. Orissa and its Tributary Mehals.

449. The first region may be said to derive its whole supply from the sources indicated. During the 3 years ending 31st March 1876, (the only years for which full salt traffic returns are available), only 1,941 maunds of Bombay salt were carried by rail into Madras, while Madras sent 1,099 maunds (probably under-taxed earth-salt) by the same route into Bombay. A little Bombay salt from the North Canara works also finds its way into South Canara, but, until the price of home-made salt at the South Canara depôts was raised to Rs. 2-2-0 a maund, that salt was selling at a lower rate than the salt of North Canara and was exported in small quantities to the neighbouring Bombay districts. The Collector of Bellary reports that some Bombay salt comes into his district from Dharwar. He does not state the quantity, but it must be trifling, for, while Madras salt is sold at the Bellary railway station for Rs. 2-8-6 a maund, the average wholesale price of salt throughout the Dharwar district in 1875 is reported to be Rs. 2-15-9 a maund. Some Madras salt from South Canara also enters Dharwar, and the above-ghat taluks of North Canara via the Shimoga district of Mysore.

450. Mysore obtains its salt partly from the east coast through Bangalore and the several railway stations in the North Arcot, Salem, Coimbatore, Cuddapah and Bellary districts, or from depôts in Nellore, and partly from the Government depôts and stores of privately imported salt in South Canara and Malabar, either by railway from Beypore through Coimbatore, or by cart and bullock carriage over the Western Ghats. The Bombay reports mention that about 40,000 maunds of salt (principally Goa salt imported at Honawar) are yearly carried into Mysore by the Nilkhad and Kolar passes, but part

of these consignments at once passes again into Bilgi and the neighbouring above-ghat taluks of North Canara and Dharwar. Coorg obtains its entire supply from South Canara and Malabar by cart and bullock carriage over the Western Ghats.

451. With regard then to regions (1) and (2), i. e., the Madras Presidency proper and Mysore with Coorg, it may be said that, while some interchange of salt takes place between them and the Bombay Presidency, the quantities passing to and fro are very small, and probably about balance one another. In calculating the consumption of regions (1) and (2) this slight disturbance may therefore be discarded. No licit salt passes from the Bengal Presidency into Madras.

452. The Nizam's dominions derive their supply of salt partly from the Bombay Presidency and partly from Madras. If we could ascertain with certainty how much salt from the latter source passes into those territories, it would be unnecessary for our present purpose to examine the quantity of Bombay salt there consumed. But we shall be only able to make an approximation to the amount exported from the east coast, and, as a check, it will therefore be needful to estimate the supply from Bombay, to add the two together and compare the sum with the estimated population. A reference to the Resident at Hyderabad obtained us a statement from the Nizam's Minister from which it appeared that the average yearly quantity of Bombay salt which had paid duty at the Hyderabad frontier was, for the three Faslî years (era doubtful) 1279—1281, 389,717 Indian maunds. These figures may represent the quantity which paid duty, but we believe there is no efficient customs cordon along the frontier, and it is necessary to look at the matter from other points of view.

453. Bombay salt reaches the Nizam's territories by the North-East and South-East branches of the G. I. P. Railway, and in small quantities by road direct from the Konkan salt-works through the Ahmednagar district. The largest imports are by way of the South-East line from stations east of Jaiwar, a station about half-way between Poona and Sholapore. Beyond Dudni, a station 40 miles to the east of Sholapore, the railway runs through the Nizam's territories as far as the Tungabadra river, but some of the salt delivered at the intermediate stations in this tract travels into Bijapur and the eastern taluks of Kaladgi and Dharwar. Mr. Pedder and the present Collector of Salt Revenue, Bombay, have estimated that four-fifths of the salt carried to stations beyond Jaiwar find their way into the Nizam's country, and this estimate may, we think, be accepted. We have examined returns of this traffic for the years 1866-67, 1868-69 and 1872-73—1875-76; but for our present purpose the returns of the last two years must be excluded, as the course of trade was modified by the opening of the Hyderabad State Railway in October 1874. The figures for the other years are as follows, four-fifths of the total salt traffic eastward at these stations being shewn:—

1866-67 and 1868-69 (average)	359,580 maunds.
1872-73	380,184 „
1873-74	398,705 „

These imports have, it thus appears, been on the increase of late years, and we think that an average of 395,000 maunds may be taken for the five years ending 1874-75.

454. The N. E. branch of the G. I. P. Railway runs for some distance through the Khandesh district skirting the base of the Sathmala mountains, which form the boundary between Khandesh and the Nizam's country. There is only one made road leading over these ghats from Khandesh, that from Nandigam to Aurangabad. Salt reaches Hyderabad territory by this route, and also, in smaller quantities, via the Ajunta ghaut, 30 miles S. E. of the Pachora railway station. The quantities of salt delivered at the two stations in the years 1873-74 and 1874-75 are:—

	1873-74.	1874-75.
Nandigam...	39,901	31,825
Pachora.....	18,924	18,753

Taking four-fifths of the average deliveries at Nandigam, and one-half of those at Pachora, (at which station there is considerable local traffic in salt), we get 37,832 maunds as the quantity of salt imported into Hyderabad territory by the North-East branch of the G. I. P. Railway. Mr. Pedder* has estimated these importations at 20,000 maunds a year. We have examined the railway salt traffic returns at stations between Manmar and Malkapur where the inland customs line crosses the railway, for the years 1873-74 to 1875-76, and find that the quantities of salt there delivered are not in excess of what might reasonably be required for the supply of the Khandesh villages in the neighbourhood of such stations. We thus arrive at 395,000 + 38,000, or 433,000 maunds as the average imports of Bombay salt into Hyderabad via the G. I. P. Railway.

455. There remains to be considered the quantity imported by road direct from Konkan salt-works; from the Konkan salt works through the Ahmednagar district. Unfortunately the Bombay permits will not shew this, as much of the salt changes hands before it reaches the Nizam's territory. The railways have now, however, almost completely driven the banjaras out of the field in Bombay, and the quantities of salt carried inland from the Konkan salt-works on carts and bullocks are small, and are decreasing year by year; they do not now average on the whole more than about 2½ lacs of maunds a year, and of this 75,000 maunds at the outside goes into Ahmednagar. What portion of this 75,000 maunds finds its way into the Nizam's country, cannot accurately be stated. One-third or 25,000 maunds may perhaps be taken as the approximate quantity. Adding this quantity to the estimate of the railway traffic given above, we get 458,000 maunds as the total average quantity of salt exported yearly from Bombay into Hyderabad. This may be considered a maximum estimate, especially that portion of it which relates to the salt traffic beyond Jaiwar. Between Jaiwar and Dadar stations the railway runs through British territory, with populous taluks of the Sholapur district on either side of it, which take their salt supplies from intermediate stations. The re-export trade, (referred to in the Minister's letter above cited), from the Nizam's country beyond Dudni must also be remembered.

456. Another addition must, at the outset of our calculations, be made on account of the Orissa sales. For it is impossible to say how much of the salt which penetrates the Central Provinces, Chota-Nagpore and the Tributary Mehals is Madras salt, and how much Orissa salt set free by its displacement within the province by salt from Ganjam.

457. Thus, to begin with, we have a total quantity made up of (I)† all Madras sales including imports on private account, (II) a specific quantity of Bombay salt, calculated in paras. 452—455 above, and (III) Orissa sales. In estimating the last we must take the five years ending 1873-74, as Act XI, 1874, came into force early in 1874-75 and materially altered the conditions; with this proviso, the average Orissa sales are 328,394 maunds. The total quantity is therefore 7,219,922 maunds, and this supplies entirely the following regions; (a) the Madras Presidency, (b) Mysore and Coorg, (c) the Nizam's dominions, (d) Orissa proper, (e) the Orissa Tributary Mehals, (f) that portion of the Central Provinces which lay south of the now abolished portion of the inland customs line, (g) an undefined tract beyond and round the same portion of the line, lying partly in the Central Provinces and partly in Chota Nagpore. A map specially intended to illustrate the position of things before the abolition of the eastern part of the line accompanies this report, and on that position our estimate must be based.

458. The first step in the further calculation must be to arrive at some

* Page 26 of his printed report, para. 92, clause 4.

	Maunds.
(I).....	6,433,528
(II).....	458,000
(III).....	328,394

Total..... 7,219,922

estimate of the quantity passing into the tract above classed as (g.) The tract is undefined, for the exact boundary between the population consuming Madras salt on the one hand, and that consuming Bombay salt or salt from Northern India or from Calcutta on the other hand, cannot be laid down geographically. A certain quantity crossed the inland customs line and paid duty. The average annual quantity of such salt in the five years ending 1873-4, (for here again we must go one year back, owing to the altered conditions of 1874-5), was 97,870 maunds. But this cannot fairly be taken as the whole amount penetrating the line, the eastern portion of which was admittedly the weakest, and in 1867-8 the Commissioner of Inland Customs estimated the amount smuggled across the line at 14,000 maunds. In that year the amount which paid duty on this part of the line was 1,81,903 maunds. But the line stopped short of the sea, and there was therefore nothing to prevent salt rounding the end of it, which was first placed at Samasingha and afterwards removed to Dama. Mr. Hume, then Commissioner of Inland Customs, wrote thus on the subject in his report of 1867-8 :

"It is not, however, across the line that smuggling has most injured either our revenue or that of the empire generally. The great blot in our present system is the gap that exists between our terminus at Samasingha and the sea. Through this gap by way of the Tributary Mehals (of Orissa) great quantities of salt round our line and permeate the north-east of Chhattisgarh and the west and centre of the Chota Nagpore country. What this salt is, it is impossible to say; it is said to be both half-duty Madras salt and Bengal salt; but the prices at which it is sold hundreds of miles away from the coast leave no doubt that much of it must be smuggled, whether out of Madras or from unlicensed works about the Chilka Lake it is at present impossible to say. Our line in Raipur being quite new, the people have this year for the first time taken the circuitous route to Ranchee via Bamra. This year fully 30,000 maunds that in past times would have gone (and did go in the previous year when the line was first laid down), up through Sambalpur to Ranchee, paying duty, rounded our terminus and escaped duty. Here alone is a loss of Rupees 45,000 even supposing this to be half-duty Madras salt; but if it be, as it is shrewdly suspected, smuggled salt, it may indicate a loss of nearly a lakh of rupees. This loss will increase as the circuitous route becomes better known, but even then ours will be the smaller portion of the loss. The Bengal and general imperial loss is far greater. The whole Tributary Mehals and Chota Nagpore are more or less pervaded with this either half-duty paying or else wholly free salt. Locally the amount so imported is estimated very highly, but it is probable that under no circumstances does the amount that thus in part or wholly escapes duty, fall short of a lakh of maunds. Here, therefore, at least 1½ lakhs and, probably, if, as is believed, much of it is smuggled salt, a good deal more is lost. At the lowest estimate the State certainly loses two lakhs a year now, and it is very probable that the real loss considerably exceeds this and will increase yearly."

459. In 1868-69 the Nagpore branch of the G. I. P. Railway was opened, carrying Bombay salt into the western districts of the Central Provinces, and the imports of Madras salt across the customs line fell to 132,000 maunds. Mr. Hume attributes the decrease, to the extent of 40,000 maunds, to the displacement of Madras salt by rail-borne salt from the west, but still complains of increased smuggling through the Raipur line and of the development of the trade rounding the eastern terminus. Next year the declared imports of Madras salt fell to 100,658 and remained nearly steady till the abolition of the line. Smuggling across the line and trade round the end of it continue to be noticed in the yearly reports as affecting the declared imports. The following table shews the imports for 5 years into the Central Provinces by the Nagpore branch of the G. I. P. Railway, and the sales on the east coast tract composed of the Madras districts of Vizagapatam and Ganjam and the Bengal division of Orissa:—

Years.	Sales in Indian Maunds in								Exports by G. I. P. Railway.
	Balasore.	Cuttack.	Poooree.	Total Orissa Districts.	Ganjam.	Vizagapatam.	Total Madras Districts.	Total East Coast.	
1869-70	Mds. 91,747	Mds. 39,921	Mds. 131,351	Mds. 323,019	Mds. 706,079	Mds. 170,920	Mds. 876,999	Mds. 1,200,919	Mds. 754,641
1870-71	93,481	22,223	137,460	253,164	774,921	177,922	952,843	1,206,927	673,430
1871-72	111,119	32,844	162,503	306,566	831,954	148,349	980,803	1,287,359	697,179
1872-73	149,428	19,973	223,310	392,711	696,921	193,408	892,329	1,285,070	657,716
1873-74	114,845	41,022	210,384	366,461	827,929	233,362	1,061,291	1,127,732	790,474
Total...	566,620	155,993	925,358	1,641,971	3,837,804	926,461	4,764,265	6,006,236	3,473,470
Average...	113,324	31,199	185,071	328,394	767,561	185,292	952,853	1,281,247	694,694

The imports from the westward have not in this period again reached the height they stood at in 1869-70, and in the last three years the sales on the east coast have shewn an upward tendency. But in the year 1868-69 they stood at 1,310,894 maunds, and the imports by the Nagpore line of railway have shewn a simultaneous tendency to recover themselves. The increase in the east coast sales throughout the five subsequent years is due to a considerable extent to increase in the Vizagapatam sales, probably for local consumption. On the whole we think that it would not be safe to argue from the above figures that the displacement of Bombay salt in the Central Provinces by Madras salt has gone on increasing since 1869-70, but that it will be a liberal estimate to assume that the total quantity of the latter carried into the Central Provinces, whether after duty paid across the line, or by smuggling across the line, or by conveyance round the line, stood, on the average of the 5 years under consideration, at the amount assumed by the Commissioner of Inland Customs in 1868-9, or say 185,000* maunds, of which only about 1 lakh was annually declared at the line.

460. With regard to the consumption of east coast salt in Chota Nagpore and its Tributary Mehals, we consulted the Commissioner of the division, but have not received so complete an answer as we could wish. We think, however, that the information we have received shews that no licit salt not supplied by the Calcutta market is consumed in any of the three districts of Hazaribagh, Maunbhoon and Singhbhoon. As to Hazaribagh the testimony of the Deputy Commissioner is express and his statement is confirmed by that of the Assistant Commissioner of Palamow. The letter of the Deputy Commissioner of Singhbhoon is equally explicit. The reply of the Deputy Commissioner of Maunbhoon is not so clear, for while in one paragraph he says that all the salt of his district is obtained from martst† whose positions shew that their salt must come from Calcutta, in another he writes of "kurcha (sic) or coarse Cuttack salt" as forming one-twelfth of the consumption. He also makes a distinction between "Liverpool" and "pungah," which appears to be a mistake. From the geographical position of the district with respect to the railway, it seems very improbable that, with Singhbhoon consuming nothing but Calcutta salt, Maunbhoon should derive any part of its licit supply from Orissa or Ganjam. In Loharduggah the Deputy Commissioner speaks of a small consumption of Ganjam salt towards the south-west, though the Assistant Commissioner of Palamow mentions no east coast salt in his sub-division, but, on the contrary, declares that salt from the Calcutta market passes through his jurisdiction en route to Sirgajah. If we assume one-fifth of the population of Loharduggah, or 250,000, as eaters of east coast salt, it will, we think, be an outside estimate. In the South-West Frontier Agency several salts appear to contend; if we take another quarter of a million out of a total population of 406,000 as consuming salt from the east coast, it will be over the mark. This gives a total of half a million in Chota Nagpore with its Tributary Mehals, and, considering the long carriage, 10 lbs. a head is probably as much as they eat in a year. We should thus have a consumption of 60,764 maunds in Chota Nagpore, which added to the 185,000 maunds estimated as passing into the Central Provinces, would give a total of 245,764 maunds, or say 2½ lakhs of maunds, as the whole drain due to the undefined region classed as (g).

* Thus	
Licit imports in 1867-8	181,903
Deduct Madras salt driven back by Konkani salt in 1868-69	40,000
Remainder	141,903
Add smuggled	14,000
Add rounded line	30,000
Total	185,903

† Raniganj, Bancoorah, Krishnanagar in Burdwan, Ghatal in Hooghly.

461. Deducting this from the total quantity ascertained as in para. 457, we get 6,969,922 maunds as the supply of the regions, with the respective populations, below entered:—

(a) Madras Presidency	31,729,925
(b) Mysore with Coorg	5,223,724
(c) Nizam's dominions	19,665,000*
(d) Orissa Proper	3,034,690
(e) Do. Tributary Mehals	1,282,300
(f) That portion of the Central Provinces lying south of the abolished portion of the customs line	1,051,500†
Total.....	52,990,148

This gives a first approximate consumption per head over this whole tract of 10·80 lbs.

462. The next thing is to eliminate as far as possible the regions here for the moment included, but which do not form part of the Madras Presidency; and first the Nizam's dominions.

The quantities of sea-salt sent from the depôt at Madras by rail to stations in Hyderabad have averaged 14,680 maunds during the last three years, but the bulk of the east coast salt which goes into Hyderabad is the produce of works in the Nellore, Kistna and Godavery districts. The Collectors' estimates of the quantities sent from their districts are based on the declarations of the traders, which, as we have already noted and as will more fully appear hereafter, are not to be depended on. In the present case they are tainted with special causes of inaccuracy. In the Kistna district, which is the chief source whence Hyderabad is supplied, the salt declared for Jaggayyapett, a salt mart situated in an extreme angle of the district and on the confines of Hyderabad, is entered under home consumption. It averaged 258,204 maunds yearly in the five years ending 1874-5, and the Collector estimates that three-fourths of this quantity or 193,653 maunds goes into Hyderabad in addition to 203,274 maunds declared for Hyderabad at other works. But this seems to us to be an arbitrary assumption, and a very improbable one, considering the position of Jaggayyapett. In the Godavery district no salt is declared for Hyderabad, but it is known that salt passes from the Ellore taluk of that district across the frontier. The quantities declared in Nellore for Hyderabad have averaged 210,350 Indian maunds; but, after deducting all quantities declared at the northern works for inland consumption, the sales at these works would give a rate of upwards of 20 lbs. a head for the taluks supplied by them.

463. We must, therefore, seek some other method of estimating the quantity of salt supplied from these districts for consumption in Hyderabad. The works concerned are those in the Godavery and Kistna districts, and the three northern divisions in Nellore, viz., Kanuparti, Padarti, and Pakala. Fortunately we are able to define with a close approach to certainty the area within Madras limits supplied by these works. To the north, a little Godavery salt is reported to enter the southern taluks of Vizagapatam, but on the other hand, it is stated that these taluks are mainly supplied from Balacheruvu and that salt from Pentakotta, which is close to the frontier, enters the Tuni division in Godavery. We may, we think, assume

* It is believed that this figure is not based on any regular census.

† This is made up as follows:—

Khasa portions of the Raipur, Sambhalpur and Upper Godavery districts	530,000
Tributary States—	
Bastar	78,856
Patna	98,836
Sonpur	130,713
Banra	53,600
Kalahandi	133,433
Bedakal	12,660
Kauker	43,252
Total.....	1,051,500

The Bastar census is open to doubt, but if the Deputy Commissioner's conjecture of 170,000 were accepted, it would very slightly affect our final result.

that the quantities crossing the frontier either way counterbalance each other. A very small quantity of Godavery salt passes into the Central Provinces, by Bhadrachalam and the Godavery river, and through Rampa into Bustar. The quantity declared for these routes aggregates only 9,675 maunds per annum on the average. The Hyderabad country is the only outlet for the salt of the Kistna district, other than the portions of the Nellore and Godavery districts immediately adjoining. From the Nellore works, however, salt is sent into Kurnool in some quantity. The declared quantity is 49,394 maunds on the average; but little sea-salt is consumed in Kurnool, owing to the prevalence of earth-salt manufacture, and it is known that salt is taken from Kurnool across the Tungabadra into Hyderabad. If then we take the whole sales of the Godavery, Kistna and north Nellore works, and deduct from them such a quantity as at a reasonable rate may represent the consumption of the tract within Madras limits supplied by them, we shall obtain a fair approximation to the quantity sent into Hyderabad.

464. The average sales and the tracts which we assume to be supplied from the works, are as follows:—

	Sales in maunds.		Population.
Godavery	284,998	Godavery	1,592,939
Kistna	648,459	Kistna	1,452,374
Nellore—		Nellore—	
Kanuparti.....	153,830	Kanigiri.....	127,258
Padarti.....	161,117	Kandukur.....	138,375
Pakala	99,572	Ongole.....	195,068
	1,347,476	Darsi.....	52,258
		Podile.....	62,924
		Total.....	3,621,200

If we assume 12 lbs. per head, the consumption of the population here given will amount to Indian maunds 528,093, leaving 819,383 maunds for the Hyderabad country, and to meet the demands for Kurnool, and the small quantities sent from Godavery to the Central Provinces. Probably 800,000 maunds may be taken as the estimate of the salt from the east coast consumed in Hyderabad including the 14,680 maunds which, as above stated, are sent on the average from Madras itself. Including the Bombay imports, the quantity of British salt consumed in Hyderabad may be stated at 12½ lakhs of maunds in round numbers, whence, if we accept the usual estimate of the population of the country, viz., 10½ millions, would result a rate of 9·6 lbs. a head. In considering the probability of this rate, it is to be remembered on the one hand that under-taxed earth-salt from Bellary, Cuddapah and Kurnool, crosses the river into Hyderabad, and is sent thither by railway;* and that such salt is also made, though according to our information in small quantities, in the Hyderabad territory itself. If these quantities could be ascertained and added, it is not impossible that the consumption of Hyderabad would exceed 10 lbs. a head, the rate assumed in the letter of the Government of India above quoted. On the other hand, however, it is possible that the population, as has usually been found to be the case in Indian estimates not based on actual numeration of the people, may really exceed the estimated 10½ millions.

465. We now have a quantity of 5,719,922 maunds remaining for a population of 42,333,148 souls and desire to eliminate the consumption of the regions (d.) and (e.) and (f.), or Orissa including its Tributary Mehals and that part of the Central Provinces south of the eastern customs line, as it existed up to 1874.

466. To do this we must again isolate the tract formed by the Ganjam and Vizagapatam districts and the Orissa division. The average annual sales in that tract have been for the five years ending 1873-4, 1,281,247 maunds. If from this we deduct what we have estimated above as passing or rounding the customs line into the Central Provinces and Chota Nagpore with its Tributary Mehals, we shall have 1,031,247 maunds. From this again must be subtracted the consumption of Orissa proper,

* In 1875-6, 14,636 maunds were sent by rail from Cuddapah and Bellary. See Chapter on Distribution.

which is, according to the rawmah accounts, 334,789 maunds, leaving 696,458 maunds as the consumption of the two Madras districts, the Orissa Tributary Mehals and the Central Provinces tract below the customs line. The populations of these tracts are as follows:—

Ganjam	1,538,236
Vizagapatam	2,283,106
Orissa Tributary Mehals	1,283,309
Central Province below the line	1,051,500

Total... 6,156,151

467. The consumption throughout the whole tract would thus be 9.21 lbs. per head, and, if it be right to assume the rate to be uniform, or approximately so, the amount consumed outside the two Madras districts would be 261,133 maunds. Deducting then this amount, with the consumption of Orissa, we should finally get 5,129,995 maunds as the consumption of the Madras Presidency with Mysore and Coorg.*

468. The rate here arrived at for Ganjam and Vizagapatam is, as will be seen, considerably lower than the general rate we shall obtain presently. But in explanation, it is sufficient to refer to the facts stated in Chapter III. as to the prevalence of illicit manufacture and frauds in Ganjam and the consumption of earth-salt in the Vizagapatam district. The local officers (Deputy Collectors) have propounded estimates giving still lower rates. They are based upon the sales for home consumption in the two districts, which amounted on the average of five years ending 1873-4 to 136,788 Indian maunds in Ganjam, and 181,920 in Vizagapatam. The resulting rates per head are respectively 7.3 lbs. and 6.6 lbs. per head. But great as has been the loss of revenue in the two districts from illicit consumption, we cannot believe that it has been so great as is indicated by these figures. The salt of Ganjam is consumed in several taluks of the Vizagapatam district, and on examining a fact urged in support of the estimate based on the Vizagapatam home sales, viz., that the declared destinations of the greater portion of the salt were villages situated in the tract along the foot of the ghats, many of which are marts resorted to by banjaras engaged in the trade for the interior, we find that such distribution accords nearly with that of the population of the district, which is thinly peopled on the coast. As to the Ganjam salt declared for inland consumption, we can only remark that if a great deal of it is not consumed within the district, it can only be accounted for by assuming rates of consumption in the Tributary Mehals and hill tracts bordering Ganjam and Vizagapatam so high as to be utterly improbable. The Ganjam and Vizagapatam districts, with South Arcot, are, however, the only districts in which the home sales do not yield a rate in excess of the probable true consumption.

469. We do not think that there are any trustworthy data on which the amount of salt passing into Mysore and Coorg can be calculated and excluded. We did indeed obtain from the Secretary to the Chief Commissioner what purported to be a statement of the average imports of salt into Mysore shewing a total of 803,200 maunds "of 80 lbs. each." But on enquiry it proved that this was a return for one year (1872-3) for the Nandidrug or eastern division alone, in which aspect it was clearly untrustworthy. We at the same time obtained figures showing an average import for the whole of Mysore for three years 1872-3 to

* Here we have deducted a figure based on the average sales in Ganjam and Vizagapatam for the five years ending 1873-4 from one which includes the average sales of the Madras Presidency for the five years ending 1874-5, and thus we, in fact, credit to Madras the excess which is found in the average sales in the two northern districts in the last mentioned period, above those for the period ending a year earlier. But, on the other hand, we have taken the Madras Presidency wholesale sales as net, after deduction of discount at 5 per cent., whereas it is known that the real out-turn (vide Chap. III) is on the average somewhat less than 4 per cent. only below the gross contents of the heaps. The two disturbing causes very nearly counterbalance each other, and we therefore neglect them.

1874-5 of 864,053 maunds. But there does not appear to be any special agency for the registration of trade statistics, and we should prefer in the absence of further enquiry not to strike a separate rate for the Madras Presidency alone. There is nothing supplied by the Madras records which will enable us to form even an approximate estimate of the quantity exported to Mysore and Coorg.

470. Taking then the figures arrived at in para. 467, we get a rate of 11.38 lbs. for the Madras Presidency with Mysore and Coorg. It must, however, be recollected that in this area are included certain tracts where salt other than duty-paid sea-salt enters appreciably into the consumption of the people. This is notably the case in the Ceded Districts, where Mr. Thornhill estimates that 3 millions out of a population of 3,957,354 souls eat no sea-salt, and everything that we know confirms this estimate. If we strike out this population of 3 millions, we get for the rest of the Presidency with Mysore and Coorg 33,963,649 people consuming 5,112,895 maunds or at a rate of 12.38 lbs. per head. In Mysore also there is some licit consumption of earth-salt, but we have not very certain figures of the amount; and there is no doubt that in Malabar and South Canara there is a considerable manufacture of the questionable salt fully noticed in our report on the West Coast salt supply, though in this case also any exact estimate of the quantity is wanting.

471. After these allowances are made, we think the rate a satisfactory one. It is not so high as some previous estimates, but they were made on insufficient data. Nor do we claim absolute accuracy for the rate we have arrived at, but, assuming that the census represents truly the facts of population at the time it was taken, we do not think there can be room for any very wide error. In estimating the amounts passing beyond the boundaries, we have, if anything, erred on the side of liberality. One correction ought, however, to be made, if there were any trustworthy data on which to calculate it, viz., a correction for increase of population in the years since the census. But as far as we know there is nothing to shew even approximately the rate of increase, and we have therefore struck the rate on the population as shewn by the census, though the average population of the period for which sales were taken would have been the more correct divisor, if only it could have been ascertained. The census, however, was carried out in November 1871, or 1½ years after the commencement of the general period to which our calculations relate, and 2½ years from the beginning, or exactly in the middle, of the period considered as regards Ganjam and Vizagapatam. Had the census occurred precisely in the middle of the period taken for the general calculation, correction for error on account of increase of population would, on any probable rate of increment, be very small.

472. The consumption in particular tracts of the Presidency cannot be estimated with any degree of confidence. We have been unable to arrive at more than an approximation to the rate in Ganjam and Vizagapatam, and have had to make an assumption as regards that in the Godavery and Kistna districts. We were in hopes of being able to separate the consumption of east and west coast salt, by tracing the zone in which they meet in Coimbatore and Mysore, but have been unable to obtain sufficient information for the purpose, or to find statistics of the quantity entering Mysore. This prevents us from isolating the consumption of the west coast or central districts of the Madras Presidency. The only case in which even a probable estimate can be made is that of the consumption in the extreme southern tracts supplied from the salt works of Madura and Tinnevely. Since the opening of the railway, the Tinnevely and Madura salts have probably gone further than before, but during the period of five years which we are considering the tract consisting of the Tinnevely and Madura districts, part of Pudukottai and Trichinopoly, and the southern taluks of Coimbatore must have drawn the bulk of its supply from the Tinnevely and Madura works. Doubtless some salt from these works passed beyond the limits of that tract, but certainly salt from other quarters was also consumed within them. If we take the population of Tinnevely and Madura districts, and of the Dharapuram and Udumalapettai taluks

Tinnevely	1,693,959
Madura	2,266,615
Dharmaparam	217,493
Udumalapettai	123,650
Half Pudukottai	158,348
Half Kulitalai	114,157
	<u>4,574,222</u>

of Coimbatore, and half that of the Pudukottai state and of the Kulitalai taluk in Trichinopoly, we shall probably have as near an approach to the number of mouths supplied by the Madura and Tinnevely salt-works as it is possible to obtain. We shall then have 4,574,222 persons consuming on the average 783,812 Indian maunds, or 14.09 lbs. per head. In stating this result, however, we desire carefully

to guard ourselves against being supposed to regard it as very certain.

473. It will be seen from our circular and the replies in Appendix A that we endeavoured to obtain some information as to the uses to which salt was put otherwise than as a condiment to human food. That a certain amount of salt is used as a medicine or tonic for cattle, and also to a certain extent in the culture of cocoanut trees, is to be gathered from the replies. But the data are quite insufficient to enable us to hazard any estimate of the quantity thus employed. The number of cattle in Government villages, (deducting Bellary, Cuddapah and Kurnool where certainly no sea-salt is given to cattle), is, according to the latest estimate, as follows:—

Tilling cattle...	3,683,773
Cows ...	2,572,169
She buffaloes ...	790,961
Total...	<u>6,746,903</u>
Add approximately one-third for zamindari villages ...	<u>2,248,767</u>
Grand Total...	<u>8,995,670</u>

But information is insufficient on all points. We do not know with any accuracy what classes of cattle are administered to, on what occasions the salt is administered, or in what quantities, and the partial information we have obtained, is often qualified by such a phrase as "when the owners can afford it." As to the quantity used for agricultural purposes, we have absolutely no figures.

CHAPTER VII.—RETAIL PRICES OF SALT.

474. In clause 4, para. 3, of the Resolution of the Government of India, the following question is put to us:—

Question for investigation.

"What is the actual retail selling price of monopoly salt, (adulterated or not, as the case may be), in town and village bazaars in different portions of the Presidency; and, if in any locality this very materially exceeds the Government monopoly price, what are the items that compose the excess?"

475. The best materials available for investigating this matter are the returns of prices made to the Board of Revenue from each station of a Tahsildar or Sub-Magistrate. These stations are more than 200 in number; some of them are large towns, but many are unimportant villages, remotely situated, and fully answering the description "village bazaars," as to which the Government of India desire information. The prices shown in these returns fairly represent those ruling throughout the Presidency.

476. The returns are prepared as follows:—each Sub-Magistrate or Tahsildar keeps a register in which he enters day by day the number of local measures of grains of different kinds and of salt, sold in the village bazaar for a rupee. The register is sent to the Collector's office once a month, and a statement shewing the average number of measures for a rupee sold at each station during the month, is sent by each Collector to the Board's office, where the weights equivalent to the local returns in measures are computed by means of a conversion table and averaged by districts for publication. Salt is invariably sold by measurement, and the value of the returns depends mainly upon the correctness of the Board's conversion table. It is therefore necessary to explain how it was constructed. The process is fully described in Board's Proceedings, 15th January 1873, No. 51, and 2nd April 1875, No. 799.

477. The measures used throughout the Presidency are extremely various, and the first step was to ascertain what the standards were. Specimen measures from all stations were sent to the Board's office, where their cubic capacities were carefully ascertained, and the relative weights of the different commodities which the measures would contain were arrived at, partly from experiments made by the Collectors with local produce and partly from information already on record. As regards salt, it was found that its weight to a given volume varied no less than 37 per cent., and the Board, thinking the experiments at first made, in which only 26 different specimens of salt were weighed, insufficient, and the conversion table based upon them therefore unsatisfactory, caused weighments of salt to be made at all stations where prices were to be recorded, and from these prepared a revised conversion table for salt which came into use in April 1875.

478. The prices per maund found by the conversion table first prepared fully bore out the Board's view, and are obviously so erroneous as to be quite useless. Salt is shown in many cases as dearer at the works themselves than in places far inland. The second conversion table, however, is much more satisfactory, being based on averages derived from 252 different specimens; and on the whole it stands well the detailed test to which it has now been subjected, by comparing the prices at each place with the probable cost of carriage of the salt to it. The extended experiments shewed that the average weight of salt to 100 cubic inches varies but little as between places on the coast and places inland, the increase in weight due to comminution of the crystals being counterbalanced by the dryage of the salt.

The Board's results are interesting and are extracted in the margin. Those for Malabar were rejected pending some further explanation; but those for east coast districts were adopted as the basis of the conversion table.

479. The returns would, however, be liable to error, even supposing the average weight of salt to be accurately known, from the carelessness of reporting officers, and still more from the uncertainty as to the local standards. The Board were compelled to admit more than 72 different standards of measure, and considerable divergence was found even amongst measures ostensibly representing the same standard. The Board remark on this point as follows:—

"The local standards are evidently not well ascertained in many instances; those now reported differ in some cases from recent statements, and it is evident from the rude character of some of the measures, made of wood and bamboo, and of irregular shapes, that standards so represented must vary, even if originally definite."

It is to be expected, therefore, that in some cases anomalous results should appear, such as salt being sold for less than the prime cost, plus cost of carriage, and even for less than the monopoly rate, and many such will be found in the Statement in the Appendix, in which the Board's price returns are exhibited and compared with the estimated cost, including carriage. It has been thought sufficient to tabulate only the quotations for the months of April, July

Coast Districts only.	Places within 15 miles of the Coast.	Districts.	Number of weighments.	Cubic inches per 100 cubic measures.	Average weight per 100 cubic inches.	Number of weighments.	Cubic inches per 100 cubic measures.	Average weight per 100 cubic inches.
Island Districts.	Bellary	Ganjam	21	1142	1142	12	1130	1130
	Kurnool	Krishna	12	1125	1125	8	1124	1124
	Cuddapah	Nellore	15	1140	1140	18	1137	1137
	North Arcot	Chingleput	13	1150	1150	5	1175	1175
	Coimbatore	S. Arcot (Merkam salt)	18	1170	1170	3	1115	1115
	Nilgiris	Madura	5	1221	1221	9	1185	1185
	Trichinopoly	Tinnevely	13	1157	1157	10	1144	1144
			68	1142	1142	62	1130	1130
			252	1156	1156			
	All districts							
Coast Districts.	Ganjam		19	1129	1129			
	Krishna		22	1124	1124			
	Nellore		24	1130	1130			
	Chingleput		11	1168	1168			
	Madura		5	1253	1253			
	S. Arcot		5	1256	1256			
	Madura Salt		6	1154	1154			
	Merkam Salt		24	1175	1175			
	Tinnevely		22	1143	1143			
	Malabar		13	1130	1130			
			252	1156	1156			

Bazaar specimen rates.

and October 1875, and January 1876, as fairly representing prices throughout the year; and, as some check upon these returns, the prices calculated from the weight of the specimens obtained by the Commission* from the bazaars, each of which is supposed to be two annas' worth of salt, are also exhibited. These latter rates, based on single specimens, cannot, in the case of a commodity which varies so much in weight, be accepted alone; but they often confirm the Board's rates, and sometimes, when the Board's conversions are doubtful, give results which are of value.

480. The stations on which the district averages are struck are necessarily

Average quotations stated:

Vizagapatam.	Paleonda.
Kistna.	Gudivada.
Chingleput.	Sripennatur.
	Conjeveram.
Tanjore.	Trichinopoly.
North Arcot.	Madurapuk.
Coimbatore.	Coimbatore.
Cuddapah.	Chitvel.

not numerous, and the inclusion of some stations for which the quotations are obviously wrong would falsify the district averages. In drawing up the following table, shewing the average prices for each district throughout the year, the quotations for the stations noted in the margin, which, on reference to Appendix D, Part II, will be seen to be absurd; are excluded from consideration.†

Districts.	No. of stations.	Average price of salt in				
		April 1875.	July 1875.	October 1875.	January 1876.	1875-6.
		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Ganjam.....	12	2 3 5	2 6 1	2 6 6	2 7 3	2 7 11
Vizagapatam.....	10	2 5 3	2 6 5	2 6 6	2 7 2	2 5 10
Godavery.....	17	2 7 3	2 7 6	2 7 3	2 7 4	2 7 4
Kistna.....	17	2 7 3	2 8 6	2 9 1	2 7 7	2 8 1
Nellore.....	15	2 5 0	2 4 11	2 5 6	2 5 11	2 5 1
Chingleput.....	9	2 5 10	2 5 10	2 5 7	2 5 11	2 5 1
Madras.....	2	2 3 1	2 3 1	2 3 1	2 3 1	2 3 1
South Arcot.....	11	2 10 6	2 6 11	2 6 6	2 6 2	2 7 6
Tanjore.....	15	2 6 0	2 6 7	2 5 6	2 5 1	2 5 9
Madura.....	7	2 5 11	2 6 4	2 11 1	2 5 11	2 7 4
Tinnevely.....	15	2 5 5	2 9 9	2 11 5	2 9 9	2 10 1
North Arcot.....	17	2 7 4	2 6 10	2 6 3	2 5 2	2 6 5
Salem.....	17	2 9 11	2 9 7	2 8 10	2 8 8	2 9 3
Trichinopoly.....	9	2 9 7	2 9 6	2 8 7	2 7 9	2 8 10
Coimbatore.....	9	2 12 7	2 10 2	2 10 11	2 10 2	2 11 6
Cuddapah.....	14	2 10	2 9 1	2 8 9	2 9 1	2 9 4
Bellary.....	22	3 0	2 15 1	3 0 1	2 13 11	2 15 3
Karnool.....	13	2 13	2 13 4	2 13 6	2 11 2	2 11 4
Nilgiris.....	3	3 12	3 11 4	3 10 11	3 8 0	3 10 8
Malabar.....	10	3 1	3 3 8	3 3 4	3 2 7	3 2 10
South Canara.....	9	2 15	2 13 6	3 3 1	2 12 3	2 13 11
	233					

The highest price quoted is that at Manantoddy in the Wynaad, Rs. 3-13-11; and the next highest on the Nilgiris, Rs. 3-12-11. The highest in the plains is Rs. 3-6-3 at Harpanhalli in the Bellary district.

481. The averages here given are merely means of the quotations at the several stations; but an approximation to a real average price may be got by multiplying the rates for the year by the population of each district and dividing the sum of the products by the total population of the Presidency, though this process involves the assumption of a uniform rate of consumption. It gives Rs. 2-9-2 per maund as the rate at which, on the average, the people of the Presidency consume sea-salt, to which alone the quotations refer. Taking the rupee at 2s., the rate is almost exactly 3d. per lb.

482. The statement in the Appendix (Part II, Appendix D) also gives a detailed calculation of the cost of carriage of salt to each of the places from the prices prevailing at which the above district averages are deduced. The cost has always been taken to be that by

the cheapest route, except where it is specifically stated that the salt supply is derived from a particular source or sources, in which case the cost of obtaining it accordingly is entered. The Collectors' statements of distances are adopted, except in a few cases where it is obvious that they are carelessly given in such cases, or where the Collector is silent, the distances have been taken by scale according to routes marked on the district maps. The Collectors' reports as to cost of carriage are not as complete as might be desired. They give in most cases the rates of cart-hire, either generally prevailing or in force for particular trips; but in some cases omit to state the ordinary load, and in others mention local measures, for which the equivalent weights are unknown, and some of their statements are therefore useless. The following is a summary of the rates of cart-hire assumed in the calculations in the Appendix.

Ganjam.—Rates of hire for trips are given. At 11 maunds of load, they are equivalent to a little less than 1 pie per maund per mile almost everywhere. When rates are not stated, we have assumed 1 pie per maund per mile.

Vizagapatam.—At 12 maunds the load, the rates given come to 1 pie per maund per mile, which is assumed throughout.

Godavery.—The rate per maund per mile is stated to be, by cart 2 pies, and by boat 1 pie. These rates are very high, but we have used them, calculating for boat carriage where the Collector has stated it to be available.

Kistna.—Cart-hire is reported 2 annas per mile for 15 maunds, or 1½ pies per maund per mile.

Nellore.—Rupee 1 for 10 miles for 12 to 14 maunds. We have taken 1½ pies per maund per mile; somewhat in excess.

Chingleput.—No rate is reported, but carriage is very cheap. We have taken 1 pie per maund per mile, which, as salt usually goes as a return load, is undoubtedly high.

South Arcot.—We have calculated cost at 1½ pies per maund per mile.

Tanjore.—Rates for trips are given. At 14 maunds to the load, they are from 1 to 1½ pies per maund per mile.

Madura.—The rates give, at 14 maunds for the load, from ¾ to 1½ pie per maund per mile.

Tinnevely.—Rates for trips and loads are given. They are from 1 to 1½—generally 1½ pies—per maund per mile.

South Canara.—From 1½ to 2½ pies per maund per mile are reported for cart-hire and ¾ pie by boat.

Malabar.—The routes and rates per 100 maunds are given for each place in the plains. Cart-hire is 1½ pies, but on the routes leading over the ghats to the Wynaad it is as high as 3 pies, the load being only 11½ maunds. By boat the rate is a little more than ½ pie.

Trichinopoly.—We have taken the rate at 1½ pies, when rates of hire are not given. The Collector says that cart-hire is generally 3 pies per mile for a bag, presumably that spoken of, viz., 32 Madras measures or 3,840 tolahs. Hence his rate would be 2½ pies per maund per mile. He states the load, however, at 14-4 maunds, and certain rates he quotes for particular trips are equivalent to the following:—Trichinopoly to Musiri 1-4 pies; Trichinopoly to Perambalur 1-1 pie; Cuddalore to Perambalur ¾ pie; Trichinopoly to Lalgudi 1-4 pies per maund per mile.

Coimbatore.—Rates of hire equivalent, at 14 maunds to the load, to 0-9, 1-14, and 1-7 pies per maund per mile are reported. Carriage is cheap and the country, as a rule, easy. We have taken 1 pie per maund per mile when the rate of hire has not been stated.

* See paras. 4-6 of the Commission's Circular of 23rd January 1873, in Appendix A of the Report.

† In Appendix D is also given a list of the prices of 36 bazaar specimens not included in the table in the text. Of these, 10 were rejected as unreliable, and of the remainder, 18 came to hand or were discovered after the averages were worked out, and the first table in Part II of Appendix D (Retail prices) in print. The prices of 10 specimens purchased by a member of the Commission are also given in the Appendix.

North Arcot.—The load is reported to be 13 maunds, and the rates of hire given for trips are, at that rate, from 0.9 to 1.4 pies per maund per mile.

Salem.—The loads are given, but in measures or sacks of unknown amount. At 14 maunds to the cart, the rates reported are from 1 to 1½ pies per maund per mile. When none are given, 1 pie is assumed.

Cuddapah.—Rupee 1 for 10 miles for 11 or 12 maunds, is said to be the cost of carriage. We have computed it at ⅔ pies per maund per mile.

Bellary.—No rates are reported. Carriage is calculated in the Appendix at 1½ pies per maund per mile.

Kurnool.—The Collector reports Rupee 1 for 10 miles for 12 maunds as the rate of cart-hire, or 1.6 pies per maund per mile.

433. We think that from the foregoing summary, it will be apparent that we have made a sufficiently liberal allowance for cost of carriage by road. We have not attempted to compute cost by pack-bullocks though these are frequently employed; and when the bullocks are owned by banjaras, or yerukalas and koravars, (the southern equivalents), the carriage in this way, through sparsely cultivated tracts, is often almost nominal. Further, we have entered the full cart-hire in every case, though it is well known, (and indeed is specifically stated to us in several reports), that salt is carried in large quantities as return load at half and one-third rates. This operates not merely in carriage from the coast, but also from the railway stations and large centres of trade. The estimate of the cost of carriage errs, therefore, on the side of excess.

434. The rates of carriage on the Madras Railway vary. Salt is classed amongst goods of the first class, for which the rate is 12 pies per ton per mile; but special rates per mile are allowed from Madras to certain stations, which (except Sholinghur, Arcot, Trivellum and Vellore) are all more than 100 miles from Madras, and which constitute nearly all the stations beyond that limit. The special rates decrease, not on a fixed scale, but still roughly according to distance, as shown in the margin. The rates from Madras are given in the following statement:—

To	Rate per Maund.	To	Rate per Maund.	To	Rate per Maund.
S. W. Line.	AS. P.	S. W. Line.	AS. P.	N. W. Line.	AS. P.
Sholinghur	2 0	Warkales	6 0	Trupetty	3 0
Arcot	2 0	Ayamathy	6 0	Coloor	3 0
Trivellum	2 3	Somameer	6 0	Madipally	3 0
Vellore	2 6	Pothugoor	6 0	Haljampett	3 2
Ghoriatum	2 11	Colabatore	6 1	Nondalore	3 4
Mailputty	3 3	Tudikoor	6 3	Westmorrah	3 7
Arloor	3 5	Karamady	6 5	Cuddapah	4 0
Vazirabad	3 9	Mettapalliam	6 5	Chandapore	4 4
Jallarpet	2 9	Muddikurly	6 2	Yerraguntla	4 7
Coopm	4 9	Wadlar	6 4	Mosshore	4 10
Cedar Road	5 5	Conjeev	6 5	Koradiparam	5 2
Mallur	5 10	Palghat	6 7	Tadipatry	5 7
Chaguddy	5 3	Puray	6 9	Royasheroo	5 11
Bangalore	6 8	Luchady	6 11	Gocky	6 6
Triptore	3 9	Westpalliam	7 0	Gediloul	6 0
Samalputty	3 9	Sherreroo	7 2	Veerapore	6 0
Morapoor	4 1	Pattamb	7 4	Bellary	6 1
Mullapet	4 5	Cotyocera	7 6	Nancherla	6 0
Siervaray Hills	4 8	Tindor	7 9	Anapoor	6 0
Salem	5 1	Tampor	7 10	Alond	6 2
McDonald's Choultry	5 5	Perpangady	7 11	Koango	6 6
Sunkery Deog	5 8	Reyvoor	8 1	Tadigahudra	6 8
Brode	5 11			Mattam	6 9
Perundary	6 0			Ridharo	7 0

Salt carried from Madras to other stations and between intermediate stations pays 12 pies per ton per mile; and this rate was also in force, it may be said universally, on the South Indian Railway during the time when the prices above given were quoted. In April 1876 a rate of 8 pies per ton per mile was introduced over the whole of that line. In computing cost in the railway districts, the cartage by road has been added to the railway rate.

435. With these explanations, we present the following statement showing the average cost of salt, including carriage, to the places for which average retail prices have been given above, and the difference between the average cost and the average price will be the profits of the distributing agency. The cheapest route for carriage is always taken when the cost by two routes is entered in the Appendix. The last two columns of the statement show the average Board's prices for each district at places for which bazaar specimens have been obtained, and the average of those bazaar specimen rates. We shall refer to these columns below:—

1	2	3	4	5	6	7
Districts.	Average retail price.	Average cost including carriage.	Profit.	Average of Board's returns for places where bazaar specimens were obtained.	Average of bazaar specimen rates.	Number of bazaar stations for which rates are included in columns 5 and 6.
Ganjam	RS. A. P. 2 7 11	RS. A. P. 2 3 3	A. P. 4 8	RS. A. P. 2 9 9	RS. A. P. 2 11 6	8
Vizagapatam	2 5 10	2 3 7	3 3	2 5 9	2 9 8	6
Godavery	2 7 4	2 4 0	3 4	2 6 9	2 9 6	8
Kistna	2 8 1	2 5 9	2 4	2 8 3	2 8 8	11
Nellore	2 5 1	2 3 1	2 0	2 5 5	2 6 6	4
Chingleput	2 5 7	2 1 5	4 2	2 6 3	2 8 5	...
Madras	2 3 1	2 0 6	2 7	...	...	...
South Arcot	2 7 6	2 3 4	4 2	2 8 3	2 7 2	8
Tanjore	2 5 9	2 1 10	3 11	2 5 6	2 7 6	8
Madura	2 7 4	2 5 2	2 2	2 7 4	2 8 6	7
Tinnevely	2 10 1	2 4 6	5 7	2 10 6	2 7 10	8
North Arcot	2 6 5	2 3 10	2 7	2 6 5	2 6 10	14
Salem	2 9 3	2 6 2	3 1	2 9 0	2 12 5	10
Trichinopoly	2 8 10	2 5 1	3 9	2 7 10	2 11 10	7
Coimbatore	2 11 6	2 8 2	3 4	2 9 9	2 10 5	3
Cuddapah	2 10 3	2 7 6	3 9	2 9 2	2 13 5	11
Bellary	2 15 3	2 9 0	6 3	2 1 1	2 3 4	13
Kurnool	2 11 4	2 11 11	...	...	...	...
Nilgiris	3 10 8	2 14 6	12 2	3 11 5	3 6 1	2
Mulabar	3 2 10	2 7 7	11 3	3 2 6	2 13 3	9
South Canara	2 13 11	2 5 7	8 4	2 12 7	2 13 3	6

151

436. Treating the rates shown as cost, including carriage, in the above statement as we did above the retail prices; i.e., multiplying by the population of each district, to obtain an approximation to a real average rate, we find the average cost including carriage to be Rs. 2-5-4; and the average profit or addition made to the cost of salt, including carriage, to be consequently Rs. 0-3-10.

437. The figures above given as the average retail prices and profit to the traders by whom the distribution of the salt is effected are surprisingly low, and it is our duty to point out the circumstances which tend to shew that the prices quoted are lower than those which really prevail, as well as any facts which go to explain the apparent extreme cheapness of salt to the consumers in the Madras Presidency.

438. The conversion of prices by measure into prices by weight, must always be a very uncertain process. The density of different samples of salt, even from the same works varies so greatly, the measures used are so multifarious, and so much depends on the mode in which they are filled, that there must be wide

Railway Stations.	Town adjoining.	Average retail price quoted.		Messrs. Arbuthnot and Co.'s wholesale rates.	
		RS.	A.	P.	RS.
Adoni.....	Adoni.....	2	8	7	2
Arcot.....	Arcot.....	2	2	3	2
Bellary.....	Bellary.....	2	8	7	2
Coimbatore.....	Coimbatore.....	3	3	4	2
Cooppani.....	Kangudi*.....	2	7	3	2
Cuddapah.....	Cuddapah.....	2	8	6	2
Erode.....	Erode.....	2	11	11	2
Gooty.....	Gooty.....	2	10	3	2
Goriattura.....	Goriattura.....	2	7	8	2
Puttoor.....	Narayanasam†.....	2	6	7	2
Rajampett.....	Pallipatt‡.....	2	7	7	2
Salem.....	Salem§.....	2	9	2	2
Sunkerydroog.....	Sunkerydroog.....	2	9	2	2
Tadpatri.....	Tadpatri.....	2	10	0	2
Tripaty.....	Tripaty.....	2	4	2	2
Tripatore.....	Tripatore.....	2	7	4	2
Trivellore.....	Trivellore.....	2	5	6	2
Tritany.....	Tritany.....	2	6	0	2
Vaniembady.....	Vaniembady.....	2	5	2	2
Vellore.....	Vellore.....	2	1	3	2
Yerragontla.....	Proddatur¶.....	2	8	1	2

variations in particular cases from the averages on which a conversion table is necessarily based, and the application of the table to such cases must give incorrect and misleading results. We find, for example, that at some places the wholesale rates at which Messrs. Arbuthnot and Co. have, according to the statement which they have furnished and which will be found in Appendix E, been selling salt at the railway stations, are higher than the retail prices quoted in the adjoining towns; though in others they compare well with the latter. The cases in which the comparison can be made are given in the margin. That firm, however, is losing the trade.

489. The very low rate of profit which results from the quotations is a further argument against their correctness. According to the best information at our disposal, the average profit, wholesale and retail, in northern India is about 11½ annas a maund; but we know nothing of the circumstances of the trade, beyond the fact that a larger investment of capital is required, and we are unable to say how far this result is relevant to prove the incorrectness of the Madras price returns, which give an approximate average profit of 3 annas 10 pies per maund. The table given *supra* para. 485 shows profit from two to six annas a maund, except in three districts, the Nilgiris, Malabar, and South Canara, where it is from 8 to 12 annas. In Kurnool no profit is shewn on the average; but, on looking into the details of stations, it will be observed that the usual rate is shewn to have been obtained at many of them. The absence of profit in the other cases is doubtless due partly to wrong quotations of price, but also to excessive estimate of the cost of carriage. The consumption of sea-salt in this district is small among the masses, if we are to judge from the fact that the bazaar specimens sent to us are without exception earth-salt, and the quoted prices of sea-salt for that district are probably altogether uncertain.

490. Another point to be mentioned in connexion with the low rate of profit shewn, is that the salt when leaving the platform contains according to analysis 9 per cent. of water on the average and the mere dryage of the salt would cause loss, when the prices are expressed in weight, which must be covered by the profit. Each unit per cent. of dryage, would add 4 pies to the cost. But Dr. Mayer's analyses of specimens from Cuddapah and Bellary, the driest districts, shew an average of 7 per cent. of moisture, and the possible loss accordingly would seem to be confined within small limits, and is probably covered by the unavoidable accretion of dirt and foreign substances to the salt.

491. We have to express our opinion whether the low prices of salt under discussion are due to adulteration, either with earth or sand, or with earth-salt or illicit salt. The opinions of Collectors, which are referred to elsewhere, vary much on this question, but the general tenour of the reports is to shew that intentional adulteration with earth or sand is not extensively prevalent, and certainly is not so to such a degree as to affect the quoted prices. As to adulteration with earth-salt or illicit salt, we may remark that the specimens of sea-salt which we have

obtained from the bazaars throughout the country, shew no trace of its presence, and we have no hesitation in stating our opinion that, though in particular cases admixture with it may affect price quotations and conduce to low returns, it cannot prevail to such an extent as to produce the universally low rates which we have analysed in this chapter.

492. While we cannot but think that the Board's quotations, taken as a whole, probably understate the retail prices of salt throughout the Presidency, we are unable to take exception to the process by which they are arrived at. The only point which strikes us is that the allowance made for heaped measure by the Board in settling their conversion table is too high, and that in general in their experiments a more liberal measure is probably allowed than actually obtains in retail transactions. If the Board's returns are too low on the whole, and if, as we have stated is probable, our estimate of the cost of carriage does not err on the side of defect, much of the difficulty as to the low rate of profit represented to prevail will disappear. The only check which we have been able to apply to the Board's rates is that yielded by the bazaar specimens, the averages of which are contrasted with those of the Board's quotations for the same places in the statement given above. The bazaar specimen rates are, we think, on the whole less trustworthy than the Board's prices, and many of them are as anomalous as any to be found in the Board's lists. But they are, considering how the specimens were obtained, more likely to be below than above the ordinary real rates, and a comparison of the average yielded by both sets of quotations, (in which individual anomalies probably counterbalance), is a test of considerable value. The bazaar specimen averages are lower in four districts, but in the rest higher. The excess is small in most cases, and is more than three annas in Vizagapatam, Salem, Trichinopoly, and Cuddapah only. In Vizagapatam we have no doubt that the Board's prices are less likely to be correct, as the measures are very uncertain, and the statements of the Collector as to price, though not very reliable, agree better with the bazaar rates. In Trichinopoly the Board's average is unduly lowered by the inclusion of an anomalous quotation for Udayarpalayam, where the measure is very doubtful. In Salem the bazaar specimen average is unduly high, because several specimens of Morkanam salt carried from South Arcot in carts are included. This salt forms but a small part of that consumed in the district, but wherever sold fetches a higher price than Madras rail-borne salt. We cannot explain the excess in Cuddapah. It is possible that the Board's rates are too low to the extent represented. As regards Bellary we observe that the bazaar specimen average is increased by the inclusion of one evidently wrong quotation of Rs. 4-13-5 for a place where sea-salt can be laid down for Rs. 2-11-2. If this is omitted the comparison will be, Board's average Rs. 3-0-8, bazaar specimen average Rs. 3-1-2—a very close correspondence. On the whole, if the bazaar specimen rates shew the Board's individual quotations to be too low, they corroborate them in shewing that retail prices on the whole range very low. Multiplying the Board's average quotations and the bazaar specimen rates by the populations, as explained above, we find the resulting average of the Board's rates to be Rs. 2-7-7, and that of the bazaar specimen rates Rs. 2-8-5; so that the latter exceed the former by on the average 11 pies per maund or 2½ per cent.

493. There are many circumstances connected with the supply and distribution of the salt which tend to explain the low range of retail prices. The Presidency enjoys probably exceptional advantages as regards facilities of communication and for obtaining supplies of salt. No portion of it, (except a small strip of the Jeypore Hills in Vizagapatam, bordering on Bustar in the Central Provinces), is more than 100 miles from the coast or from a railway; and salt works or sale depôts exist on the average at intervals of 18½ miles on the east coast. The communications are good, and are being improved yearly. There are, according to the most recent returns, 17,186 miles of made roads, and 1,269 miles of railway,

* Distance 1 mile. † Distance 3 miles. ‡ Distance 8 miles.

§ Distance 3 miles. ¶ Distance 8 miles.

besides many miles of water communication in the Malabar, South Canara, Godavery, Kistna, Tanjore and Chingleput districts. Except in Malabar and South Canara, communication by cart is practicable by tracks across country in every direction almost throughout the year. The distances between the consumers and the points of supply (counting the railway stations as such points) being short, the salt passes through very few hands, and there is not much opening or need for large wholesale trade.

494. As a matter of fact, it appears from the reports summarised in Appendix A that very little wholesale trade exists. The general result of these reports is to show that in the coast districts the bazaarmen or retail dealers supply themselves either from the pans, or from hawkers who obtain small supplies there, or at the periodical markets whither salt is brought from the pans by cartmen or dealers in comparatively small quantities. In such districts salt probably rarely passes through three hands before it reaches the consumer. The only cases in which there appears to be a regular and well established system of supply through wholesale dealers are the large depôts at Salur, Parvatipur and other places at the foot of the ghats in Vizagapatam, where the over-ghat traders obtain supplies for the Central Provinces; the district of Malabar; Trichinopoly and Erode; and railway stations generally, whence the mode of supply seems to be analogous to that from the pans in the coast districts.

495. All the information which we have obtained as to the railway trade in salt tends to show that the merchants engaged in it are unable to make any large addition to the price. Cart-borne salt meets them at many points; it goes regularly to Conjeveram, and interferes with the traders in rail-borne salt at Arcot; cart-borne and lambadi-carried salt competes with them in Cuddayah; salt from Merkanam carried as return load for a fraction of a pie per maund per mile meets them about Tripatore and Vaniembady, and in Salem and Alagartaluks in the Salem district, and salt from Madras passes on carts through North Arcot along the high road from Madras to Bangalore. If therefore the railway traders attempted to force high profits, they would be undersold, and we know that there is keen competition for the trade and that those who have tried to work it at a high rate of profit have been or are being driven out of it.

The first person that went into it on the opening of the railway was Mr. Cammiade, who was allowed to establish his depôts, free of charge, in the railway godowns. He retained the trade for many years, but with great difficulty, having, as Mr. Church, the Traffic Manager, told us, contented himself with a charge, above carriage, of one anna per maund, and, when pressed by competition, with 6 pies. On his death, Messrs. Arbuthnot and Co., Messrs. Parry and Co., and others with large capital, went into the trade; but, though charging high rates of profit, as much as 3 annas 4 pies and 4 annas per two maund bags, they were unable to make it pay, and are now being superseded. Messrs. Arbuthnot and Co. and Parry and Co. had, like Mr. Cammiade, the use of the railway godowns. Several other firms have attempted to gain a footing in the trade, but all are now being driven out of it by a firm of natives, Nagappa Chetty and Co. The head of this firm told us how he does business. He maintains no depôts at the stations and thus incurs no charge for establishments and bears no wastage. He acts as a mere agent, and has established a connexion with the up-country dealers. These men order up salt as they want it, and Nagappa Chetty sends it up charging a commission of one anna a bag. Besides this, he makes profit out of the discount and credit system. Mr. Cammiade (junior) and

he both told us that there was seldom less than the 1140 bags, which with the five per cent. discount ought to be obtained from a 20-garce heap, and that they usually got somewhat more, up to 1160 bags, and in rare instances even more than 1200. Further, the wholesale merchants, being allowed credit for six months are able to get the salt, realize the proceeds, and turn the money over several times before they are called upon to pay anything. From these causes and from competition, retail sales, properly so called, have almost ceased on the Madras

platforms, the wholesale merchants selling the salt at 2 Rupees a maund, and even less. When the salt is very light, they are enabled to get a profit out of the sale by measure, that is to say, they are able to give the petty dealers, to whom they sell by measure, short quantity.

496. The east coast districts of this Presidency differ from most other parts of India in one important respect, viz., that the rains are more evenly distributed and lighter and that traffic is therefore continuous almost throughout the year. On referring to the statement above shewing prices quarterly, it will be noticed that, as a general rule, there is no rise in the rainy season. In Vizagapatam and Kistna there is a slight rise in the July and October quotations; in Tinnevely a small and in Madras a considerable rise in October; and in Kurnool there is a rise in June. In other east coast districts nothing of the kind is apparent. In Malabar there is a slight rise in the rains, but in South Canara, where the interruption to traffic during the rainy season is greatest, a considerable one. Thus there is no necessity, as a rule, for laying up stocks throughout the country for several months' consumption, as is required where traffic is rendered impossible or greatly reduced for long periods during the rains. The salt can be got always, from no remote distance, and as it is wanted; and the result is that it passes through few hands; there is no need for large wholesale trade and for sinking of money, but investments in salt are turned over very rapidly. These considerations go far to explain the cheapness of salt and the apparently narrow margin between the cost of salt and the retail selling price.

497. On the whole, we arrive at the conclusion that the prices quoted by the Board are lower than the retail prices which really prevail, but that the difference cannot be very great; and we think we are warranted in reporting that the retail price does not in any locality exceed the Government monopoly price by more than the cost of carriage and the legitimate profits of the traders by whom the distribution is effected.

CHAPTER VIII.—DISTRIBUTION.

498. The information attainable on the subject of distribution is, so far as quantities of salt are concerned, extremely meagre. No statistics have been collected shewing salt traffic between the Madras Presidency and other provinces, or between district and district of the former, if we except the returns of traffic on the railways. Attempts were made in Vizagapatam in 1874 to obtain some record of the traffic over the ghats, and the results have been placed at our disposal by the Collector, but the figures are so obviously inaccurate as to be not worth reproducing here. We were under the impression that traffic on the Godavery canals was fully registered, and have obtained such returns as exist. But we find that the traffic is registered only at the Dowlaishwaram lock, where the system of canals leaves the river, and statistics as to the quantity of salt passing that particular spot are of no value for the purposes of our enquiry. The source whence information as to the distribution of the salt has hitherto been sought is the record of the declarations as to its destination made by purchasers at the works. These, as will be shewn, are quite untrustworthy in respect of quantity; but they are of value as indicating in a general way where the salt goes to. The reports of the Collectors in answer to para. 10 of our Circular, dated 28th January 1876, summarised in Appendix A, give a good deal of detailed information as to the direction of salt traffic, which is most valuable. The general results will be discussed below.

499. Before proceeding to analyse the railway statistics, we will notice the figures given in the Collectors' annual returns as representing salt declared for home and inland consumption, i. e., consumption respectively within the district and beyond its limits. The destination of the salt in the latter case is given except in the case

of Chingleput, but the actual exports from Madras by rail almost completely supply the defect. In Ganjam large quantities of salt are declared for Parvatipur, Salur and other places at the foot of the ghats leading over the Jeypore Hills into the Central Provinces, but are entered in the accounts as for the Vizagapatam district. So in the Kistna district salt declared for Jaggayyapott, a considerable centre of trade on the borders of the Nizam's country, is entered under home consumption. In the following statement, which shews in one view the distribution of the salt on the average of five years ending Fasli 1284, according to the declarations of the purchasers, the corrections suggested by the Collectors of Ganjam and Kistna in these cases, have been effected. Appendix D, Part III contains a statement which gives the details for each of the five years:—

Declared for	Ganjam.	Vizagapatam.	Godavery.	Kistna.	Nellore.	Chingleput.	South Arcot.	Tanjore.	Madras.	Trinnevelly.	Malabar.	South Canara.	Total.	Consumption per head in lbs.	Remarks.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Orissa-Chingling	41,017	...	...	...	...	...	...	...	...	...	...	...	41,017	...	...
Trich. Nellore	130,487	...	...	...	...	...	...	...	...	...	...	...	130,487	...	...
Central Prov.	175,318	312,318	...	...	...	...	...	...	...	...	...	...	487,636	...	...
Godavery	402,557	4,468	97,480	...	...	...	...	...	...	...	...	...	407,015	...	...
Kistna	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nellore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chingleput	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Arcot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tanjore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trinnevelly	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malabar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Canara	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017	1,017,017

It is apparent at a glance that these figures are quite unreliable. From the calculations made in the chapter on consumption it is clear that a larger quantity than is here represented is exported from the two northern districts, and more from Godavery, Kistna and Nellore to Hyderabad than the declarations shew. The low consumption in the Ceded Districts is of course due to the use of earth-salt,

a subject which has been elsewhere dealt with. The consumption of Chingleput and North Arcot cannot be over 17 lbs. The quantity entered against Chingleput includes that sent to Conjeveram, of which much is consumed in North Arcot. *Pro tanto*, the salt entered against North Arcot is displaced, and it is known that much salt passes out of North Arcot into Mysore. Much more salt goes from Malabar into Mysore than 83,000 maunds, and salt from Coimbatore also enters the latter. So also the rates for Tanjore and South Arcot, especially the latter, are quite misleading. The southern part of South Arcot draws salt from Neidavasal in Tanjore; during the last five years the South Arcot sales were very low owing to want of stock, and a large proportion of the sales at Cheyur in Chingleput (which average 82,400 maunds) must have been for the South Arcot district. Again the population of the villages intermingled with French territory at Pondicherry, numbering 85,313, are supplied from French depôts, and not from those of South Arcot. The Trichinopoly rate also shows high, because Trichinopoly itself is an important centre of distribution, and quantities of salt declared for that place are sent thence into Coimbatore and the southern parts of Salem. It was necessary to reproduce these figures here, but enough has been said, though more might be added, to show that they are almost worthless as indicating the distribution of the salt in respect of quantity.

500. In the absence of complete statistics, we must therefore content ourselves with an analysis of the railway traffic returns and with a general description, based on the best materials we can obtain, of the chief routes of salt traffic and of the sources whence each tract of country is mainly supplied. We are indebted to the Consulting Engineer to Government and to the railway authorities for such statistics of salt carried by rail as we have obtained. The preparation of them, incomplete though they are, has involved a good deal of trouble and delay. We have details of the quantities despatched from Madras by the Madras Railway for the 10 calendar years 1866 to 1875, of the whole traffic on the Madras Railway for three official years, 1873-4 to 1875-6 and of the whole traffic on the South Indian Railway for three calendar years, 1873, 1874, and 1875. These materials enable us to present a tolerably complete view of the trade, and to draw some useful conclusions. The statements compiled from these returns will be found in Appendix D, part III.

501. The Madras Railway was open through to Beypore in 1862, to Bangalore in 1864, and to Cuddapah in September 1865, just before the commencement of the series of years to which the statistics of the traffic from Madras apply. The North West line was further extended as shewn in the margin. The following statement gives the quantities of salt carried from Madras in each year to stations in each district:—

Districts.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Chingleput	1,470	1,756	2,308	2,512	2,218	1,148	2,026	1,833	1,166	233
North Arcot	15,427	14,434	16,935	17,320	15,744	12,396	14,745	14,264	13,876	14,082
Cuddapah	3,910	3,536	4,878	4,330	4,235	3,185	2,723	2,423	1,773	1,587
Bellary	...	...	500	1,423	2,659	2,579	1,800	1,169	1,459	1,097
Hyderabad	...	...	...	...	...	550	550	653	543	462
Mysore	6,820	7,834	6,729	5,696	5,246	5,541	4,534	5,036	4,949	5,924
Salem	3,960	9,830	9,319	7,438	8,002	7,013	5,791	7,878	8,414	11,455
Coimbatore	7,301	6,145	7,432	7,029	6,693	6,663	5,510	6,081	5,251	8,599
Malabar	12	...	...	...	6	...	...	...	...	720
Total	43,903	43,595	48,391	45,320	44,403	33,880	38,165	40,655	37,431	44,365

The above table shows that, notwithstanding the addition during the period in question of 247 miles of railway,* the quantity of salt carried by rail from Madras has not increased, though the rates have also been considerably lowered. Up to 1870, the

* Pothanore to Mettappalli... 23
Cuddapah to Bellary and Raichore... 221

rates to all stations except those where Tanjore salt competed between Salem and Coimbatore was 12 pies per ton per mile. In 1871 the rates to the principal stations on the South West line and the Bangalore branch were reduced to 10 pies; and further considerable reductions were made, until, in 1875, the scale of rates given in the chapter on retail prices, which, over a considerable portion of the line are only 6½ and 7 pies per ton per mile, was introduced. There was a satisfactory increase in 1875, as compared with 1874, which, however, was a very bad year for railway traffic, as, owing to unfavourable conditions for agriculture, cart traffic increased. The years 1873 and 1874 would have been worse years, but for the increase in the salt sent to Salem, due to the falling off of sales in South Arcot, owing to shortness of stocks. A great portion of the increase in 1875 (already noticed) is due to the enhancement of the monopoly price on the West Coast from March of that year, which diminished the exports from Malabar for the supply of the western parts of the Coimbatore district. Immediately on the change the West Coast salt was driven back, and East Coast salt began to penetrate into Malabar itself. It will be

Years.	Sold at Madras	Sent out by rail.	Per cent.
Fash 1876	Tons. 50,109	Tons. 49,586	98.9
1877	46,940	44,161	94.0
1878	47,354	47,774	100.8
1879	47,635	46,253	97.0
1880	45,180	41,613	92.4
1881	39,458	38,915	98.6
1882	52,834	39,560	74.8
1883	40,570	37,867	93.3
1884	43,062	39,151	90.9
	401,226	390,860	97.4

quarters of the following year.

	Average sales, 1876-79.	Average sales, 1880-1884.
Home's Gardens...	L. Mds. 73,206	L. Mds. 101,938
Sunnappagunta ...	14,513	13,350
Covelona ...	6,499	4,691
Excess, Madras ...	56,781	64,276
	151,023	134,261

502. So far we have been discussing the up-traffic from Madras only, and the figures we have been using came from the audit offices of the Madras Railway. The more complete returns of the whole traffic on the line for quarters making up three official years were compiled from way-bills in the Traffic Department, and as regards the traffic from Madras do not quite agree with the other figures. The first point which attracts attention in the Madras Railway abstracts is the decrease in the quantity sent from Madras to the Ceded Districts and Raichore, and the increase in quantities of salt despatched thence. These figures are discussed in detail in the portion of Chapter III dealing with earth-salt. There have been a few small consignments, probably experimental, of Bombay salt to Bellary. The whole quantity was only 1,941 maunds in two years. The next noteworthy point is the decrease in the quantities of salt sent by rail into Coimbatore from the West Coast, and the increase in the quantity of East Coast salt consumed there. The reduction of rates on the Madras Railway in the beginning of 1875, together with the enhancement of the price of salt in Malabar, have combined in favour of the Madras salt. That of Malabar may be said

observed that, except in 1868 when the railway was extended into the Bellary district, there has been a steady falling off in the quantities sent by rail into the Ceded Districts. This is due to the development of the earth-salt manufacture, a fact which is also elsewhere noticed. The decrease in the railway traffic from Madras on the South-West line which set in from 1868, is probably due to the expansion of the Tanjore trade, on the manufactured salt of Vedaranyam being made available in adequate quantity at Negapatam. We have the sales at the Madras stores only for two years and to compare them with the railway exports we must take the last two quarters of each calendar year with the first two. From the marginal figures it will be seen that on the average 95 per cent. and in one year (1868-9, that in which the railway was extended to Tadputri and Gooty) the whole of the salt sold at the Madras depot was despatched by rail. The proportion has been decreasing of late years, a fact which indicates probably increased export by carts towards Conjevaram and Arcot. None of the salt carried by rail stops short of Trivlore and for the supply of the town of Madras and the adjoining country, there remain sales as shewn in the margin.

	1873-4.	1874-5.	1875-6.
	Mds.	Mds.	Mds.
Madras salt.....	149,374	143,745	253,623
Tanjore salt.....	115,885	114,707	89,934
West Coast salt.	53,143	46,320	9,558
Total...	321,405	306,842	352,965

to be now beaten out of the district, salt from Madras having begun even to invade Malabar. The figures in this margin, shewing the imports of salt into Coimbatore, prove this. The Pollachy taluk, and in great part those of Coimbatore, Oodumalpettah, &c., in the west central part of the Coimbatore district, used to be supplied with West Coast salt, which even found its way through Suryamangalam round the base of the Nilgiri hills into Collegal and Mysore. This salt was despatched chiefly from Beypore and Tiroor, (where the salt sold at Ponany reaches the railway by back-water) to Palghat and Coimbatore; but it has gone as far as Erode and Mettappolium on the Madras Railway and even to Caroor on the S. I. Railway. The following statement shows the course of this traffic for the last three years:—

To	1873-74.				1874-75.				1875-76.			
	From Beypore.	From Tiroor.	From other stations in Malabar.	Total.	From Beypore.	From Tiroor.	From other stations in Malabar.	Total.	From Beypore.	From Tiroor.	From other stations in Malabar.	Total.
Palghat	1. Mds. 36,276	1. Mds. 19,361	1. M. 374	1. Mds. 76,011	1. Mds. 40,632	1. Mds. 32,497	1. Mds. 2,008	1. Mds. 75,137	1. Mds. 13,433	1. Mds. 24,055	1. Mds. ...	1. Mds. 37,488
Other stations in Malabar....	17,699	4,391	145	22,235	11,692	7,374	269	19,335	7,249	6,284	1,467	15,000
Coimbatore....	37,976	12,351	400	51,227	22,826	11,127	1,457	34,910	962	2,467	291	3,720
Other stations in Coimbatore	1,725	2,410	...	4,135	1,820	9,292	889	11,501	447	5,791	...	6,238
Elsewhere.....	...	...	...	...	72	473	170	715	11	...	...	11
	113,676	39,013	919	153,608	76,042	60,763	4,873	141,678	22,112	38,597	1,758	62,467

Thus the Malabar railway trade fell in a single year to less than one half its former dimensions; but, to counterbalance this, there was an increase of 50,083 maunds in the quantity sent from Madras to Coimbatore, and salt (23,655 maunds) began to go from Madras to Palghat itself.

503. These figures, however, shew, even before the change in price on the West Coast, a substitution of traffic from Tiroor for that from Beypore, and in 1875-76, while the traffic from Beypore fell nearly 75 per cent., that from Tiroor fell only about a third. The salt which reaches the railway at Tiroor ought to come from the Ponany depot; but we find that there has been a decrease in the sales of Government salt there, as shewn in the margin. It seems certain that much of the salt which is taken up at Tiroor is illicit Malabar salt made near Chowghat. In 1875, 5,750 maunds went further east than Coimbatore, which the Beypore duty-paying salt could not do.

Paull.	Mds.
1879.....	213,865
1880.....	184,897
1881.....	199,716
1882.....	165,009
1883.....	167,867
1884.....	159,924

504. The statistics of railway traffic on the South Indian line do not call for remark, except to point out the decrease in the quantities sent to the Coimbatore district which has been already alluded to.

505. On the opening of the extension to Madura in September 1875, salt was at once sent along the line in the quantities shewn in the margin, even Madras salt being forwarded from Erode; but this traffic has ceased beyond Dindigul since the line to Tuticorin has been opened. A statement giving details of the South Indian Railway traffic for three years will be found in Appendix D. Part II. The total quantities sent from Negapatam, the sea coast terminus since June 1872, have been as follows:—

half-year ending	Tons.	half-year ending	Tons.
Dec. 1872...	6,035.20	Dec. 1874...	6,114.43
" June 1873...	2,436.14	" June 1875...	4,586.73
" Dec. 1873...	7,170.44	" Dec. 1875...	5,613.44
" June 1874...	4,169.38		

* These figures are for the calendar years.

506. The following statement shows the whole railway traffic in salt for two years, 1874 and 1875. It shews that from 15 to 16 lakhs of maunds, or about one-fourth of the whole salt sold, are rail-borne:—

To	From															Total
	Madras	Chingleput	North Arcot	Cuddapah	Bellary	Hyderabad	Rayachoti	Central Provinces	Mysore	Salem	Coimbatore	Tanjore	Trichinopoly	Madura	Malabar	
Madras	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Chingleput	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
N. Arcot	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Cuddapah	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Bellary	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Hyderabad	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Rayachoti	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Central Provinces	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Mysore	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Salem	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Coimbatore	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Tanjore	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Trichinopoly	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Madura	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Malabar	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350
Total	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350	1874 32,350	1875 32,350

The principal centres of trade in rail-borne salt and the quantity received from the coast by each are shewn in the statement in the margin. The falling off in the Conjeveram traffic by rail is probably due to the influx of earth-salt from Cuddapah, and to an increase in the traffic by cart, which has a great advantage owing to the break of gauge at Arconam. Something is perhaps also due to the increase at Arcot, the southern taluks of North Arcot drawing supplies from the two stations. From Vellore salt goes into these taluks also, but Vellore is rather a centre of distribution for the north of the district and the southern parts of Cuddapah, which are connected with it by an important line of trade. The decline in the quantity sent to this station is probably due to increased manufacture of earth-salt in Cudda-

Districts.	Quantity received from the Coast in		
	1873-4.	1874-5.	1875-6.
Conjeveram	Maunds. 26,553	Maunds. 17,200	Maunds. 7,200
Arcot	68,536	62,769	76,970
Vellore	180,250	175,640	163,193
Bangalore	100,624	106,019	126,253
Trichinopoly	41,250	48,319	62,780
Salem	72,105	82,826	141,443
Sunkerydoo	39,758	48,099	50,729
Erode	37,480	40,163	46,623
Avenashy	59,043	58,574	98,863
Coimbatore	59,860	41,782	61,945
Palghat	31,367	30,925	55,760
Rajampett	13,393	13,806	11,674
Cuddapah	23,348	16,907	17,966
Gooty	21,751	7,901	7,101
Bellary	9,313	13,664	9,503
Caroor	...	85,574	52,045
Trichinopoly	...	114,210	117,729

* 78,223 from Madras.

† 71,175 "

‡ Including 1,000 Maunds of Bombay salt.

pah. The quantity sent to Bangalore and other stations in Mysore is increasing. Salt from Bangalore finds its way into the extreme southern taluks of Bellary, which are nearer to Bangalore than to Gooty; and much of that sent to other railway stations in Mysore passes into the northern taluks of Salem, the frontier of which is skirted by the railway. There is a remarkable increase in the quantities of salt sent to stations in the Salem district, due as already stated to diminished supply from the South Arcot district. The figures are given in the margin. Erode is a place of importance in the salt trade, and exhibits the peculiarity that a great deal of the salt sent there by rail is re-exported also by rail. The amount of such re-export is shewn in the margin. There is very little of such re-export by rail elsewhere, salt going from Madras to every station, and being thence disseminated in the neighbourhood by cart or coolly carriage. It will be noticed from the figures above given that a largely increasing quantity of salt is sent to Avenashy, a place where a main line of road running north and south through the Coimbatore district from Mysore intersects the railway. The explanation of the sudden increase in 1875-6 is found in the decrease at Caroor. Tanjore salt sent to Caroor used to come in carts to Avenashy and seriously interfere with the Madras trade to that place; but the reduction of rates on the Madras line seems to have put an end to this. The increase in the quantities sent to Coimbatore and Palghat in 1875-6, has been already explained by the inflow of East Coast salt. The falling off in the traffic to the Ceded Districts has also been noticed. Trichinopoly as a centre of distribution of salt is a very important place, and shews (like Erode) exports by rail, which, however, are only 10,000 maunds a year. Such salt is probably that brought by cart to the town from Adrampatam and the southern divisions of the Tanjore district.

507. Our statistics do not embrace any of the traffic on the South Indian extension to Tuticorin, opened in November 1875. This is likely to have very important effects as regards salt distribution. Already the Tanjore salt has been driven back from Madura and Dindigul, and it seems probable that Tuticorin will eventually supply the greater part of the Madura district as well as South Coimbatore. At 1 anna per ton per mile, the rail-borne salt in these tracts could hardly compete with cart-borne salt from the Madura pans; but the Company has recently (April 1876) reduced the rate to 8 pies per ton per mile, a measure which is likely to be as advantageous to their revenue as to the consumers of salt, and should place the railway trade in that commodity on a sure basis.

508. As regards distribution of salt in districts and places not served by railway, we can venture upon none but general statements. It is unnecessary here to reproduce all the details of routes, &c., given by Collectors, and set forth in Appendix A. It will suffice to state generally how the salt of each district is disposed of, and whence each more important tract of country draws its main supply. In Ganjam the course of trade in the last few years presents some interesting facts. The northern part of the district was formerly supplied from the Ganjam and Ichapur pans, from which also was mainly drawn such salt as went into Orissa, the Tributary Mehals and regions beyond. Since the enhancement of price at these pans, the salt of Nowpada, partly no doubt owing to its better quality, for its cost is in excess, is consumed at Ichapur itself in preference to the salt of that place, so that manufacture had to be stopped there this year. Nowpada salt has driven back Ganjam salt and invaded the north of the district, and has now possession of the routes leading round the north of the Ganjam hills *via* Russellkonda into the Tributary Mehals and Central Provinces. The large quantities of salt for the last-named province carried from Nowpada and Womeravilli round the south of the Ganjam hills through the Vizagapatam district have been already frequently noticed. The salt of Vizagapatam appears

to be consumed within the limits of the district; and the same is probably true of the greater part of the Godavery salt. A small quantity passes into Bustar (Central Provinces) through the difficult hill country of Rampah; a further quantity, not large, goes up the Godavery river; and some salt passes into Hyderabad from the western part of the district near Ellore and Chintalapudi. This part of the country, however, consumes as much Kistna as Godavery salt. The great outlet for the salt of the Kistna district and of north Nellore is in the Nizam's dominions. The three northern works in Kistna send their salt to Hyderabad chiefly by the Bezwar and Jaggaipett route, but some also goes through the Godavery district and the adjoining parts of the Kistna district by Tirunur. The salt of Chinna Ganjam and of the northern divisions of Nellore passes through Ongole in Nellore *via* Addanki, Dachapalli and Pondergole direct to Hyderabad. Some of the north Nellore salt also reaches Hyderabad through the Kurnool district and Kurnool itself, *via* Cumbum and Markapur. The populations of these two taluks, in the east of the Kurnool district, so far as they eat sea-salt, consume that of Nellore, which meets the Madras salt from the several railway stations near the southern border of the district, and in the central taluks. The Collector states that some salt crosses the western frontier of Kurnool into Bellary, but the quantity must be very small. The salt of the central Nellore divisions (Kistnapatam and Iskapalli chiefly) crosses the Dorenal pass into the Badvel taluk, and thence is carried westwards across the Cuddapah district even into Mysore and Bellary. The salt of the southern stations in Nellore, principally that of Tada, is carried by Venkatagiri and Kalastri into North Arcot, and interferes considerably with the railway trade from Madras to stations between Arcotum and Tripaty. The distribution of the Chingleput salt is almost entirely by rail and has been sufficiently noticed. That of South Arcot leaves the district by three routes, one to the north and one to the south of the Shevaroy Hills, by which it meets the rail-borne salt at Uttangarai and Tripatore, and at Salem respectively, and one south-westwards into the Trichinopoly district. The salt of Neidavasal in north Tanjore spreads into Chellambrum in South Arcot, and into the western parts of Trichinopoly. The Vedaranyam and Negapatam salt is distributed chiefly by rail; and that of Adrapatam and the neighbouring divisions, which is much esteemed, goes due north across the district to Combaconum and also finds its way in considerable quantity to Trichinopoly. Sea-salt passes into Mysore by a multitude of routes, crossing the frontier at all points; from South Canara and Malabar through Coorg and the Wynaad; from Coimbatore through Collegal;* from Salem; from Madras by rail; from North Arcot through Palmanair; and from the Cuddapah and Bellary districts. It is impossible, on the data we have, to hazard even an estimate of the quantities which enter Mysore; and indeed, as to salt distribution generally we may remark that, where the country is open, the routes of traffic are so multitudinous and intersecting, and are determined so much by considerations of general trade, as well as in some cases by the preference of the people, that it is unsafe to assign particular salt to a particular locality, or to attempt to isolate any tract of country in order to compute the rate of consumption.

509. One fact of importance, however, is clear from the experience in the Ganjam district and from the railway statistics, *viz.*, that the general direction of the traffic is determined by the cheapness of the salt, and that the trade is most sensitive to changes affecting the cost, the slightest advantage in respect of means of carriage or consequent on change of price being at once seized upon, and the competition amongst dealers being apparently keen and healthy throughout the country.

510. Since Fasli 1274 there have been no exports of salt on Government indent, which was previously usual, and was chiefly to supply stores at Calcutta and Chittagong. The details of the declared destinations of salt exported by private traders for twenty years from Fasli

* The black (Bombar from Malabar *via* Wynaad) and white (Madras) salts used to meet in this taluk. The Deputy Tahsildar says "there is no such relish or spirit in the white salt as in the black one." The latter fetches a price 25 per cent. higher.

1265 to Fasli 1284, are given in Appendix D, p. xxvii. The trade shews on the whole a tendency to decline. The chief place of export is Calcutta, and almost the whole of the salt intended for that place has been furnished, especially of late years, from the Chingleput works. The same is true as regards the exports to Chittagong, though Nellore had a considerable share of them. These exports ceased altogether for 9 years, from Fasli 1267 (1857-8) to Fasli 1275 (1865-6), when they revived for a time, but have now ceased again. Exports from Chingleput and Tanjore, chiefly to the Malay coast and the Straits Settlements, have continued steadily, and in one year (1871-2) were upwards of 2 lakhs of maunds; but they have since fallen to less than 40,000 maunds. Travancore and Cochin, the British districts on the West Coast, and Ceylon intermittently take small quantities of East Coast salt, almost entirely from the Tinnevely district; and Ceylon has in a few years taken salt from Tanjore as well as from Tinnevely. Salt has also been exported, but in insignificant quantities, to Acheen and other places in Sumatra, to Rangoon, the Maldiv Islands, and to Balasore.

CHAPTER IX.—MONOPOLY AND EXCISE.

511. The questions of the possibility of introducing a system of excise in the place of the present monopoly and of the probable effects of the substitution have been placed before us in the 7th and 8th heads of the Resolution of Government. The case for consideration is thus put:—

1. "Are there any, and if so what practical difficulties attendant on substituting a system of excise for the present monopoly?"

2. "What would be the probable result—(a) as regards the cost to the consumer, (b) as regards the net revenue to Government—of substituting excise for the present monopoly?"

512. Both these questions have been the subject of discussion from time to time, but we need not do more here than very briefly sketch the general purport of the arguments urged. The issue between excise and monopoly was first raised before either as a system was in force in the southern Presidency, at a time when the salt revenue was still very insignificant.

The acquisition of further coast territory gave the matter added importance, and Collectors were consulted as to which of the two systems they would recommend. Here of necessity the discussion was all *a priori*, as far as the suitability of either system to Madras was concerned. The arguments used are summed up by Mr. Plowden in paras. 612—616 of his report. The majority of Collectors and the Board of Revenue were in favour of an excise, and the strongest point urged by any of the minority was the danger of loss to the revenue and insufficient supply and consequent increased price to the consumer alleged to be likely to arise from the want of capital in the hands of the manufacturers. Mr. Falconar's minute, which is the most elaborate document on the side of monopoly, is mostly addressed to shewing that the objections to monopoly urged by his colleagues were not vital. But he does also bring forward a positive objection against excise, which, in exact opposition to the view just stated, he regarded as likely to increase unduly the quantity of salt made and so to promote smuggling and evasion of duty. As pointed out by Mr. Plowden, the case was never argued out on its merits at this stage and a monopoly was introduced in preference to excise, not because it was considered better adapted to the Presidency, but (to use Mr. Plowden's words) "blindly, "because the Supreme Government had" (simply as following the system then in force in Bengal) "prescribed the establishment of a monopoly."

513. The possibility of a change of system was, it appears, first suggested by Mr. F. N. Maltby for the district of Canara alone. We have already referred to his letters in our report on the

West Coast. He advocated the introduction of an excise system there, but, as a necessary preliminary, wished to get rid of the system of Government importation, though the measures we proposed to this end were ineffective. Soon afterwards came the instructions from the Court of Directors in 1853 directing the institution of an enquiry, which Mr. Plowden was accordingly commissioned to conduct. In anticipation of Mr. Plowden's arrival, the Board collected the opinions of local officers. Except Mr. Cochrane of Chingleput and Mr. F. N. Maltby of Canara, all Collectors objected to the change. The letters of the two officers who formed the minority are, however, without doubt the most thoughtful in the collection. The objections urged are thus classed by Mr. Plowden, (and his classification practically agrees with that given by the Board in Mr. Bayley's memoranda, para. 201):—

"(1) the present mirasidars or proprietors of salt-pans would be injured; (2) the price would not be reduced to the consumer; (3) the supply would be deficient and uncertain; (4) the quality of the salt would deteriorate from the present standard; (5) the injury to the revenue from smuggling would be infinitely greater; (6) the cost of collecting and protecting the revenue would be inordinately increased; (7) the inquisition of the excise officers would be intolerable."

514. The Board, though not disposed to advocate change and rather than anything else acquiescing in the fate of a system they considered "doomed," (it had a longer lease of life than they then supposed), admitted that the objections urged against an excise were not insuperable. They wrote:—

"The Board believe that a modified form of excise is not inconsistent with the views of those who oppose the monopoly. If the manufacture is limited to certain localities, the establishment necessary for preventive purposes will, it is expected, not increase in a larger proportion than the revenue it is designed to protect. The above explanation disposes also of the objection to having an 'army of chaukidars.' There appears nothing in the system itself (independently of the country where it prevails) to necessitate a heavier outlay in the way of establishment than is now required under a monopoly. It is possible that at first, till the system becomes understood, the supply might not be quite so plentiful as it is now; but this would rectify itself on the principle of the supply meeting the demand."

"The mirasidars would probably be somewhat hampered at first; but the Government would be as ready to assist them as any other ryots as far as is consistent (*sic*); and the objection is not one that should weigh much against other reasons."

"It might be necessary at first to make the change by degrees, but eventually the Government would participate as little in any salt transaction as they do in Bombay or Calcutta. The Board are inclined to believe that salt manufactured by private parties under an excise would be quite as good as it is now; competition would induce this."

"The price of salt to the consumer under an excise system, would fall, in proportion as the private individual could make it cheaper than the Government make it. It could probably be made for Rs. 6 a garce or 94 pies per maund. This is the price that a salt mirasidar generally gives to those who cultivate his pans for him."

515. Mr. Plowden, as is well known, reported entirely in favour of an excise and the introduction of the change in the two West Coast districts and in Chingleput was actually ordered, when suddenly, in July 1859, Mr. Forbes, the Madras member of the Legislative Council of the Governor General, was instructed not to proceed with the excise bill, because the Government of Madras had determined at least to postpone the change of system until the then existing establishments should be strengthened and reformed, and because on the general question as between excise and monopoly it appeared doubtful whether, with a tax seven times the intrinsic value of the article taxed, it was wise to disturb an old established system in favour of excise. The question as one of introducing an excise system throughout Madras generally has never again come up till now, and the history of the discussion as regards the two exceptional districts of South Canara and Malabar is sufficiently set forth in our separate report. After for eight years urging the application of an

Subsequent history of the proposal to substitute excise.

excise to those districts, the Board, on perusal of the Bombay reports of Messrs. Pedder and Pritchard, came to the conclusion that "the intention to introduce an excise system into this Presidency should be abandoned." We have elsewhere, (para. 78 of our letter, dated 10th June 1876), expressed our opinion that the facts recorded in those reports do not prove anything one way or the other.

516. The general question was again raised by Mr. Falk's animadversions on the Madras monopoly, and, before the Secretary of State had ordered the appointment of a Commission of enquiry, these strictures had drawn from the Government of Madras a defence* from which the following is an extract:—

"His Excellency the Governor in Council is of opinion that the system of raising a revenue from salt by means of a Government monopoly, which has so long subsisted in this Presidency, could not be replaced by the excise system without risk of serious loss to the revenue, or with any prospect of benefit to the people."

"As regards the revenue, the best mode of levying the tax from salt must always be a question of much difficulty; and, though it may not be easy to decide whether, on the first imposition of the tax, the method of monopoly or that of excise would have been likely to be most productive to the Imperial treasury, there can be little doubt that a change to the latter method, now that the former has been so long in operation with results far from unsatisfactory, would be extremely undesirable."

"In considering how far the Government revenue might be affected by a change to the system of excise, it is to be observed that, if there were to be a consequent decrease in the price of the salt to the consumer, the increased consumption which would probably ensue would be beneficial to the revenue. But, for reasons which will be presently stated, no such decrease is likely to take place. If, on the other hand, the price of salt to the consumer is increased by the change, the result will be injurious to the revenue. From the eastern districts of this Presidency a net revenue of rather more than a million sterling is now realised. If the excise system increases the price in any sensible degree, so much can scarcely be expected, and the possibility of enhancing the duty, if the necessities of the State should require it, will of course be *pro tanto* lessened."

"As regards the people, the supply of salt to the population of Southern India is a matter of extreme and exceptional importance, and, though this would be no reason, if the interests of the public revenue were not also involved, for the Government to undertake a monopoly of salt, His Excellency in Council believes, as a matter of fact, that present arrangements are more advantageous to the consumer of salt in this Presidency than if the method of excise were adopted."

"In the interest of the people there are three questions to consider—

- (1st.) the quality of salt supplied;
- (2nd.) the price;
- (3rd.) the sufficiency of the supply.

"As regards the first question, the Governor in Council observes that the monopoly system requires a minimum standard of excellence, and all salt not attaining it is at once destroyed. This standard, which is as high as can at present be imposed, will be raised as the system of manufacture is improved under the arrangements now in progress; but meanwhile it prevents inferior and unwholesome salt from getting into the market; and it may be stated with truth that the salt sold by Government is a fairly good and wholesome article. But, while this important end is attained, the system holds out no inducement for the manufacture of an article much above the standard, as the maker gets no additional price for it. Here the excise system has an advantage, as the maker fixes his own price, and will of course charge more for a superior than for an inferior article. On the other hand, however, the excellence of his manufacture will depend on the price the people will pay for his improved salt. Now, as a fact, the people do not care for extreme fineness; they actually prefer and, from choice, not necessity, buy what Europeans consider comparatively impure and inferior salt, and it is undoubtedly the case that, however fine the salt may be as sold at Government stores, it is more or less adulterated by the purchasers prior to retail sale. English salt is wholly unappreciated. Again, each increase in the price of salt has been accompanied by a diminution in consumption, and a check to that rise which the cheapening of transport, the increase of the population, and the

* Letter to Government of India, No. 256, dated 17th February 1875.

improving circumstances of the people should produce. This shows that there is not much margin to allow of materially improved and, therefore, more expensive manufacture. It may be fairly concluded that, while some salt of better quality will be produced under the excise system, the average will be much the same as at present; and certainly much inferior salt, which is now destroyed, will be sold at a reduced price and find purchasers among the poorer classes.

"With respect to the price at which salt would be obtained by the people, it seems to His Excellency in Council very problematical whether the price will be lowered. The manufacturers at present receive but moderate prices; but they have certain indirect advantages in dealing with the Government. For instance, all their salt is taken off their hands as soon as it is made and paid for at once, thus relieving them of all risks, saving them from loss of interest on the value of their unsold salt, and enabling them, when the manufacturing season is ended, to transfer their labour to other employments. They are not men of capital, and the rates of interest on borrowed money are excessively high. The probabilities then are that the price of salt will certainly not be lessened; the present price of 3 Annas per maund, or about 5 Rs. per ton, is too low to admit of such an expectation. Competition has little operation in this country. Combination is rather the rule, and the remote and isolated position of the salt-pans affords great opportunities for it. The inland trader especially, to whom, with his drove of pack-cattle, time is a great consideration, and who now can get his salt promptly at a fixed price from a single seller, would be very much at the mercy of the excise manufacturers with each of whom he must make his own bargain.

"As regards sufficiency of supply, it must be observed that much difficulty is experienced even now in keeping up a sufficient stock of salt to guard against the contingencies of unfavourable seasons. The prescribed stock is equivalent to eighteen months' consumption, but is hardly ever attained. It is not probable that excise manufacturers would keep so large a stock in hand at their own risk. If they did, they must raise their prices to cover the additional outlay.

"The material differences between manufacture under the present monopoly system and manufacture under the excise system are not many.

"Under the monopoly, the Government regulate the quantity of salt to be made at each station, a minimum standard of quality is prescribed, and all the salt made and approved becomes the property of Government at fixed prices, which must be sufficiently remunerative, or of course the manufacture would cease. The salt thus bought is sold at the different stations at a price which covers cost and duty. After this sale, the Government interfere no further, and foreign salt can be imported and sold by any one on payment of the same duty as is realised on home-made salt, viz., Rs. 1-13-0, or 3s. 7½d. per Indian maund of 82½ lbs. Under the excise system, the manufacturer would be free to make as much or as little salt as he pleases, and of any quality he chooses, and to sell it to any one at his own price, paying the fixed duty of Rs. 1-13-0 to the Government on every maund sold. There must of course be certain restrictions on the freedom of manufacture, as, for instance, it would not be allowed in places where smuggling cannot be prevented, or where the out-turn is insufficient to justify the retention of the necessary excise and customs establishments; but these restrictions would all be in the spirit of the ordinary customs regulations.

"These are, I am to submit, the chief considerations affecting the decision of the question at issue. Considering that the people are perfectly contented with the present system, that they are supplied with good and wholesome salt at very reasonable cost, that a large and increasing revenue is realised with ease and certainty, and neither consumer nor manufacturer seek any change, it seems to His Excellency in Council more prudent to adhere to a system which, though theoretically open to objection, has proved successful in practice, than to substitute for it a system which gives no well-founded assurance of better results for the people or for the State."

517. We invited the opinions of Collectors generally on the subjects of our enquiry, but only four officers have gone beyond the specific questions put. The replies of these four are collected in Appendix A under the head of 'general remarks.' Mr. Davidson, Collector of Ganjam, is opposed to an excise; Mr. Garstin of South Arcot sees no difficulty in the way of its introduction except the conventions with the French; Mr. Stuart of Tinnevely appears to consider the necessity for change unproved; and Mr. Wedderburn of Coimbatore does not specifically notice the point, but insists on the cheapening of salt to the people as the main object to be kept in view.

518. We propose to deal with the subject in the order in which the questions regarding it are propounded by the Government of India, and first of all to discuss the practical difficulties which attend the substitution of a system of excise for the existing monopoly. It will, we presume, be admitted on all hands that a sudden transition is impossible, and the change, if it is to be introduced, must be effected gradually and with great discretion. The salt-manufacturing classes are ignorant and prejudiced, and specially abhorrent of change. They would misunderstand what is intended, and would be fearful of not being able to sell their salt, or to realize remunerative prices for it; and, if excise were suddenly introduced everywhere, the result would not improbably be either that no salt, or an utterly insufficient quantity, would be made, or that private capitalists would step in and acquire local monopolies of greater or less extent, which would, in our opinion, lead to evils greater than exist under the State monopoly. These results would be almost certain to accrue at the smaller works. The change, therefore, must first be made in those places where the conditions are most favourable, and the system, if then successful, gradually extended until monopoly is entirely superseded. To the question of the best places for beginning, we shall return further on.

519. The first essential to the success of an excise system is the existence of sufficient competition amongst manufacturers, and on this depend all the good effects which give to excise its theoretical superiority. It is unnecessary at this stage to dilate upon this point, for the fact will be generally admitted, and experience, so far as it has been acquired of the working of excise as applied to salt manufacture in India, confirms it. The only place where excise has been markedly successful is the large works in the neighbourhood of Bombay, known as the Konkan works, and the circumstances are there evidently favourable to competition. The works are large and lie close together; great lines of traffic converge there; and there is an unrivalled demand for the produce. Conditions so favourable can hardly be found in Madras, though doubtless sufficient competition would arise at many places; but competition would, at least at first, probably be wanting at the numerous small works, and these must for a time be kept under monopoly, and some of them possibly even developed for the security of the salt supply.

520. It has often been urged against the introduction of excise in Madras that the manufacturers as a body are too poor to carry on manufacture except under monopoly; but we do not anticipate that this will be found a formidable obstacle. The holders of salt-pans are certainly not poorer than the general body of agriculturists, to which class, in fact, they to a great extent belong. The manufacture is not one which needs a large capital, and the greater part of the cost of production is made up of remuneration for labour, which is required for the most part at a season when agricultural operations languish. Many of the pan-owners are certainly wealthy men. As throwing some light on this question we have compiled the following figures, shewing the average quantities of salt sold or made for each registered owner at the Konkan works in Bombay, in each district of the Madras Presidency and at some of the principal Madras divisions. It must be explained that the Bombay averages here shewn are higher than the truth. The return of registered holders on which the statement is based is imperfect, in the first place because it embraces only "shilotris" or superior holders, and in the second place, because Government is entered as sole shilotri of a number of works in Bassein and Matunga, which produce four-sevenths of the total out-turn in the former, and one-half in the latter, and which are worked by numerous sub-tenants. The actual number of manufacturing holders in Bombay is thus greater than is here shewn; and, if it could be ascertained, the average out-turn per man would be much reduced. The general average in Bombay is also swollen by the inclusion of Trombay and Panwell, in which works there are evidently some very large proprietors.

Bombay (Konkan works.)				Madras.							
Name of work.	Average produce, 1873-4 and 1874-5.	Number of persons registered as proprietors.	Average produce per man.	Districts.	Average produce, 1873-5 to 1874-5.	Number of persons registered as proprietors.	Average produce per man.	Divisions.	Average produce, each 1875 to 1884.	Number of persons registered as proprietors.	Average produce per man.
	I. M.	I. M.			I. M.	I. M.			I. M.	I. M.	
Bombay	367,147	110	3,311	Ganjam	853,923	961	889	Ganjam	194,124	180	1,080
Ghorabunder	714,543	397	1,800	Vizagapatam	193,366	203	953	Nowpada	305,517	241	1,268
				Godavery	289,531	757	383	Womeravilli	299,091	431	693
				Kistna	613,639	581	1,056	Pennaguduru	275,644	391	705
Trombay	379,675	21	18,080	Nellore	644,752	1,426	452	Manginapudi	262,925	97	2,692
				Chingleput	1,935,267	1,885	867	Chinna Ganjam	202,240	264	766
Matunga	647,537	116	5,488	South Arcot	321,340	282	1,140	Kanigaparti	154,135	181	852
				Tanjore	694,750	876	794	Padarti	180,350	227	798
Uran	1,350,397	1,013	1,325	Madura	527,916	304	1,779	Pakala	193,833	212	914
				Tinnevely	502,787	361	1,392	Madras	1,311,930	1,324	940
Panvel	1,043,022	54	10,093					Cheyur	75,661	80	946
								Merkanam	249,546	120	2,080
Sankse	567,131	351	2,470					Negapatam	151,793	134	1,123
								Vedaranyam	93,622	206	448
								Adrampatam	102,638	90	1,141
								Tuticorin	89,225	43	2,051
								Loringapuram	116,580	51	2,286
								Sivandakolam	130,000	29	4,483
								Arasadi	120,889	61	1,982
	5,471,452	2,072	2,640		6,077,453	7,736	783				

521. As the figures stand, however, the amount of produce on which, on the average, the manufacturer in Bombay has to rely scarcely exceeds that which is found at several Madras works. The average for the whole of Uran, which is the largest of the Bombay works, is less than in some Madras divisions, as is also that for Ghorabunder, the third largest of the Bombay works. On the whole, the disparity does not seem to be such as to give just cause for fear that excise will fail in Madras by reason of the poverty of the manufacturers, though the very low average at some of the works may, perhaps, indicate the necessity of caution. It may be said, however, that the very smallness of the average means that the manufacturers are numerous in proportion to the demand—a state of things favourable to competition. We have already noticed the apparent improvement in the condition of the manufacturers—so far as shewn by quantities of salt produced per man—since the time when Mr. Plowden wrote. We do not think that there will be any necessity for assisting the manufacturers with advances in any shape, and we fully agree in Mr. Plowden's views upon this point, (see para. 636 of his report).

522. An obvious practical difficulty connected with the change to a system of excise is the disposal of the works of the several classes on which considerable sums have been expended by Government under the monopoly. The following figures,

* The average for the Godavery district is unduly lowered, because Mogaltur which furnished half the proprietors has been open only 3 or 4 years. Compare the average got for Pennaguduru alone.

† The average for Vedaranyam is also unduly low. The produce is for ten years, during which period the manufacture has been considerably extended, whereas the return of proprietors is for the present time. If it be compared with the out-turn for the last two years of the series, the average becomes 845 maunds per man.

‡ The out-turn for Loringapuram and Sivandakolam is for the three years and one year during which these works have been respectively open.

extracted from the table given in the chapter on cost, shew the approximate capital value of these works on the 1st April 1875.*

Works for salt manufacture.....	Rs. 3,71,521
Works for storage and revenue purposes.....	„ 8,52,442
Sundry works for public convenience.....	„ 1,75,358
	<u>13,99,321</u>

The total value may thus be stated at 14 lakhs of Rupees, and Government cannot abandon so large a sum. Even though it were decided that under excise the future care of the works should be given up to the manufacturers, interest on the past outlay should be realized for the State.

523. We think, however, that a distinction must be drawn between the several classes of works and that different treatment must be adopted in the case of each. As to the “sundry works” which, as has been explained, consist chiefly of short lines of road and approaches to the sale depôts, and of traders' sheds, tanks, wells and such like, the general public are as much interested in them as the manufacturers of salt. It is probable that outlay upon them hereafter will diminish, or the cost be transferred—as has already been done to a considerable extent—to the local bodies charged with the duty of providing such conveniences for the public in general. At any rate the outlay is of a kind for which Government have not sought direct return, and the sum involved is not great. We think that no attempt need be made to preserve the state interest in them, and that no charge need be made on salt on account of them.

524. As to the works of storage and revenue, it would, in our opinion, be necessary to retain the control of them under excise. Under a self-supporting system the cost of revenue buildings will have to be recovered in some form, and the interest on past outlay can be realized at the same time. We most strongly recommend that, if excise be introduced, the manufacturers be compelled to store their salt in places selected by officers of Government. The importance of a provision of this kind is very great, as facilitating guarding and the prevention of fraud; and the system, being already in operation in the Madras Presidency, would be readily accepted and easy of enforcement. The existing places of storage would therefore still be used, though doubtless more space would be required under an excise system. It is necessary that the construction of platforms, where new ones are wanted, should be subject to the approval of Government officers, and the objects in view will be best secured by retaining the control of storage works, and treating them in the same way as works for revenue purposes, recovering the interest on the cost of permanent works and the whole sum necessary for repairs.

525. In the event of change to excise, however, works connected with salt manufacture had best be left entirely to the manufacturers. These works are usually of a simple character and of a kind to which the salt-makers themselves are accustomed, and which they will probably execute much cheaper than the officers of Government can. In some cases combination will be required, but the ryots are used to club their labour for such works, and will find no difficulty in arranging amongst themselves for their execution. The case of storage and revenue works, however, is different, and the help of Government—which in the event of such a transition as that proposed, it is desirable to afford

* The following are, according to our computation, the capital values of the works at some of the stations on the same date:

Districts.	Rs.	Districts.	Rs.
Ganjam.....	29,786	Madras	2,81,395
Nowpada.....	18,981	Covelong	37,863
Konada	6,505	Merkanam	59,159
Balachervu	4,013	Negapatam	35,883
Pennaguduru.....	17,315	Vedaranyam, (quit-ting the canal)....	25,251
Iskapalli.....	3,368	Tuticorin	7,097

as far as possible—would there be required. We think our proposal that these works should be retained in the hands of Government, would commend itself to the excise manufacturers. The interest on the past cost of works for purposes of manufacture should of course be recovered. The amount is very small outside of the Madras works.*

526. The necessity for recovering interest on the past outlay on permanent works brings us to a consideration of the best mode of making an excise self-supporting, that is, of realizing the charges which the State has to incur in watching the manufacture and levying the duty. The Government of India seem to imply that these charges should be realized from the licensed manufacturer as they accrue, on the plan followed under the system of excise in force in Pooree, where the cost of preventive establishments on the scale deemed essential is levied from the licensee monthly in advance. We apprehend that this course will be found impracticable in those Madras works at which excise may be introduced. It is possible to follow such a system where there are single manufacturers working at separate sites, and where it is consequently certain that the whole of the charges would eventually fall upon salt the property of a single person. It might even be possible to work it where the manufacturers, though more than one, were still few; but at a Madras work, where there might be several hundreds, it would be quite impossible to assess with justice the shares which should be borne by individuals. No attempt has yet been made to levy these charges in Bombay, where the conditions more nearly approach those of the Madras works than in Pooree.

527. Theoretical perfection no doubt demands that each manufacturer should be called on to pay exactly the amount of charge entailed by the existence of his manufacture. Works vary in character, and some require greater expense in establishments to watch them and supervise sales than others; and to secure the full benefits of excise in the employment of the most advantageous sites and in minimizing the cost of the salt to the consumers, all such natural superiorities should be allowed scope to influence the competition. But the practical obstacles to the introduction of such a system in existing Madras works are, we fear, insuperable. It would obviously be in any case impossible to carry the localization of the charges beyond divisions comprising many separate holdings, and even to carry it so far would involve considerable detailed and uncertain investigation of past expenditure, and distribution, necessarily to a great extent based on assumptions more or less arbitrary, of salt charges which, being general, have not been put down to particular works. There must, then, it seems to us be a cess in some shape for the recovery of these charges, and it remains to consider when and on what basis it should be levied.

528. We think that the charges should be recovered when the salt is sold, and that the recovery should be made by a charge per maund of salt sold. To levy the amount from the manufacturers as the charges are incurred, would be to require them to make advances probably equal to or in excess of the cost of their salt, and thus they would have to find and risk at least double the capital. Further, though they would of course ultimately charge such prices for their salt as would protect themselves from loss, they would never know exactly what current charges would be demanded of them, nor whether they would be able to sell the whole or any of the salt on which charges already paid had accrued. The recoveries from the purchasers in the shape of enhanced price for the salt sold would, consequently, tend to exceed the charges made by Government, and the system would thus unnecessarily increase the price of salt to the consumers. The Government charges must, therefore, we think, be recovered along with the excise when the salt is sold, in the shape of a rate per maund. This method seems to infringe the theoretical principle above stated, in that all salt would be equally charged and advantages depending on situation or productiveness of particular holdings would not be allowed for. But the objection

* The total for all districts except Chingle, is Rs. 1,72,774, or less than half the whole.

loses much of its force from the fact that under the proposed plan the charges would not fall directly on the manufacturers at all, and would in point of fact be no concern of theirs. Government would have to advance the money, but that is a small matter.

529. The only alternative system in the case of a group of works constituting a Madras division would be to assess the amount to be charged equably by an acreage charge on each holding; but even this would not carry out the principle completely, and would be open to the objection that it would necessitate larger capital being found, and would at once let in the money-lender. The rate would also have to be varied according as holdings were extended or abandoned, and a vast amount of detailed measurement of holdings would be needed. The nearer approach to theoretical perfection which the plan would secure would be dearly purchased at the price of the friction which would be caused, and we therefore recommend the plan of a cess per maund of salt sold.

530. The calculation of the rate of such a cess is not an easy matter. To begin with, the calculation of cost in the past gives averages per maund which become more and more uncertain, the smaller the quantities from which they are derived, i. e., as we descend from longer to shorter periods of time, from the Presidency to districts, and from districts to divisions. Again, the quantities saleable (whence the averages per maund) depend upon the price; the premiss is that at a certain gross price a certain quantity was disposed of, but if the price be raised the quantity will be decreased, and the average of charges per maund increased accordingly. The only thing constant in the calculation is the amount of the charges, and, as the charges too will almost certainly be raised, it is evident that past results afford an insecure basis to go upon, and that only an approximation to the proper rate can be expected. For these reasons we would recommend that no attempt be made to strike a rate for a less area than a district, whether for the charge to be levied in addition to excise, where an excise system is introduced, or for the closer adjustment of monopoly price to cost which may, perhaps, be ordered with reference to our calculations on that subject. The only exception in which it would be possible or safe to make calculations regarding an individual work seems to us to be the case of the works subordinate to the Madras depot; but the cost there, according to our calculations, scarcely differs from the district average.

531. In connexion with this question it must be remembered that, since it is essential that excise be gradually introduced, there will for some time co-exist both excise and monopoly works competing with each other; and therefore that re-adjustments of the monopoly price must be made in such cases, in order that the excise manufacturers may not be unduly weighted. Even here, however, we would adhere to a district cess, though the perfection of adjustment of relative burden may not be thereby secured. There will not, we think, be any serious difference as regards cost of management between excise and properly officered monopoly works.

532. It remains to discuss whether the addition to the excise necessary to make the system self-supporting should take the form of a separate cess on the salt sold, or should be actually incorporated with the excise. The latter plan would have the advantage of simplicity, and the question whether the net or true excise resolved upon was or was not realized could be investigated from time to time. But it would be necessary to prescribe differing rates of gross excise, and this would not be understood. The plan of a separate cess presents greater facilities for adjusting and regulating the charges, and the object of the charges would be at once indicated and understood. The rate of cess should be fixed so as to allow of a margin sufficient to prevent contingent loss to the State; and, if any surplus worth distributing accrued, it should be spent for the benefit of manufacturers and purchasers in the district where it was realized. It is necessary to add that the system would

require that some kind of capital account should be maintained for revenue and storage works the cost of which is to be defrayed from the cess.

533. The next point for consideration in connexion with the practical introduction of excise is the treatment of the salt-producing lands, and the question whether a charge to the credit of land revenue should be made upon them. We are decidedly of opinion that no charge can be made in the case of lands now used for salt-making. The manufacturers' rights are somewhat indefinite, varying from full proprietorship to a merely conceded right of occupancy. But the occupancy right embraces freedom from charge for use of the land; and in the change to excise, which is presumed to be merely a change in the form of taxation, this freedom must still accompany the right of salt-making on the lands, or the position of the manufacturers will be impaired. This makes it almost impossible to impose a charge for ground-rent on persons who may open new works under excise. At any rate, we are of opinion that a charge, if laid upon such lands, should be assessed with reference to their value for ordinary purposes, and not their value for salt-making, the principle of differential land taxes with reference to special products having been long since given up, and that it should not take the form of a cess upon the salt sold, but of a direct charge upon the land. If it is made on these principles, the charge will be of very small amount, and we think that lands applied for by new excise manufacturers might be granted free, *bona fides* being secured. Any imperial charge on lands used in salt manufacture in fact amounts to an enhancement of the tax.

534. There are certain cases of favourable kudivaram granted on the ground of caste or class, and, on the principle that such distinctions have been refused recognition in resettlements of land revenue, the holders of such pans would not be entitled to compensation in the event of a change to excise. But there are a few favourable grants which are true imams, attached to institutions, or granted for service, and in such cases it may be found necessary to allow compensation proportioned to the excess kudivaram enjoyed.

535. The disposal of stocks of monopoly salt after the introduction of excise will not present any difficulty. They should be disposed of by auction in small quantities at a time for such price as they will fetch in excess of the duty. The stocks should, as a measure of precaution, be made as large as possible before the change is initiated at any place.

536. We now come to the second question put by the Government of India the probable result of the change, (1) to the consumer, and (2) to the exchequer. At the outset it will be well to arrive at a distinct understanding as to the things to be compared. We think the comparison for the present purpose can best be made between a monopoly under which the selling price should be so fixed as to realise a clear duty of Rupee 1-13-0 per maund and a system under which salt should pay an excise of the same amount. We have seen that at present a clear duty of that amount is not realised; if therefore we chose the existing state of things for one side of the comparison, a part of the probable result of the change would be due not to the substitution of excise for monopoly, but to a practical enhancement of the rate of the tax. We will suppose then that the selling price is so fixed as to cover the cost to Government and yield a clear duty of Rupee 1-13-0 a maund. We set aside the case of the Ganjam district, in a part of which exceptional rates prevail, and confine our view to the rest of the east coast alone. We also discard the error due to the practice of selling whole heaps at a discount of 5 per cent. It must further be remembered that it is probable that an efficient administration under any system will require an increase of the supervising and protective and preventive establishments. It is only so far, if at all, as the excise system in itself necessitates stronger estab-

lishments than monopoly for an equal degree of security of revenue, or *vice versa*, that the change under this head can here be taken into account.

537. Let us then first consider the probable effects of the change on the cost of salt to the consumer. Under a monopoly the price is made up of the selling price, the cost of carriage and the profit of the various persons through whose hands the salt passes in getting from the Government stores to the consumer. Under an excise system it would be composed of the price, including any cesses levied by Government, at which the salt passed into the hands of the first buyer, the duty, (assumed at Rs. 1-13-0 a maund), the cost of carriage and the profits of intermediaries. The cost to the consumer might thus by the substitution of an excise suffer modification in one or more of several ways; e.g., (1) the price paid by the first buyer *plus* the excise may prove to exceed the monopoly selling price; (2) the number of intermediaries may be affected; (3) the rates of profit may be modified; (4) the cost of carriage may change. Let us consider each of these contingencies *seriatim*. It is clear that we can only do this in a general way, for the true cost varies from district to district and to work out the problem thoroughly would require an elaborate investigation of all the conditions of each individual work and an estimate of the local effect of the change. We must, therefore, make some simplifying assumptions. We will accordingly suppose that under the imagined excise system, Government still maintains the storage platforms, recovering the cost by a cess, and that it also recoups itself in the same way, and not by direct demand from the salt manufacturers, for the charges on account of supervising and preventive agency, which under a 'self-supporting system of excise,' ought to fall on the manufacturer or at any rate primarily on him. We will also suppose that, as in calculating the cost of salt to Government under the present system we have distributed these charges over the whole Presidency, so the cesses for works and for supervising and preventive establishment are uniform throughout. And we assume that no land revenue is levied on the ground occupied by salt-pans over and above the excise on salt.

538. Will, then, the price paid by the first buyer tend to increase or decrease under an excise, it being remembered that the rate of tax in each case is, *ex hypothesi*, the same? There is, we think, a good deal of evidence to shew that the change will tend to reduce it. We traced in the chapter on cost the items which, so far as may be gathered from the charges under the monopoly, now correspond to this first hand price, and we found it to amount to 1 anna 10-9 pies per maund as shewn in the margin. The storage charges are enhanced under the present system by the inclusion of heavy sums in payment for hired labour. If the storage works are retained as suggested in the hands of Government, who will recoup themselves for the outlay, this portion of the storage charge will, of course, remain unchanged, or at least not decrease; but, so far as the item includes charges which would be defrayed by the manufacturers themselves, the cost of storage is likely to decrease under excise. The item of interest on stock would be determined by different conditions from those at present existing; for that portion of the value of stock whereon the interest is to be charged, which is made up of the half revenue charges included by us, would not fall upon or be advanced by the manufacturer, and he would demand higher interest than 4 per cent. The one consideration may perhaps be set against the other, and it seems to us very improbable that interest would under excise enter into the manufacturers' price to a greater extent than 1-2 pies per maund. There remains the item of cost of production represented by the kudivaram, and there is, we think, much evidence to shew that this affords margin for a reduction, which competition between manufacturers under excise would secure for the benefit of the consumers.

	A. P.
Kudivaram and works for manufacture	1 7-5
Storage, including works	2-2
Interest	1-2
	1 10-9

539. Even in the discussion of 1854, when kudivaram rates were much lower than they now are, opinions were expressed that under undue enhancement of kudivaram, excise the first-hand price would be reduced, and the cost of production decreased.* Since then, as traced in chapter II., the rates have everywhere been raised and a perusal of the correspondence has convinced us that in many cases the enhancement was unnecessary. It was the readiest way of getting out of difficulty about improvement of quality or increase of quantity, and was naturally in some cases had recourse to without sufficient consideration. It is to be remembered also that, notwithstanding the enhancement of the rates by about 50 per cent. on the whole, the consideration for the kudivaram is much less now than it was. The relief from charges on account of works conceded to the ryots in 1862 was a considerable one, and in other ways their liabilities have been steadily diminished. Salt-pans are now regarded as a valuable form of property, are readily sold and mortgaged, and are to a great extent held by persons† who do not themselves engage in manufacture. When the Levingepuram and Sivandakolam works were opened, the Collector sold the right of occupancy of the pans by auction, subject to stringent conditions as to the method of manufacture, &c. Each crystallising bed realized on the average Rs. 4, and many were bought by money-lenders as an investment merely, and are now leased out.

Subletting of pans.

Districts.	Percentage held by non-manufacturers.	Percentage worked otherwise than by sub-tenants or sharers.
Ganjam	96	...
Vizagapatam	25-68	22-10
Godavery	13-45	62-85
Kistna	32-22	41-79
Nellore	35-43	19-24
Chingleput	27-66	21-54
South Arcot	65-38	66-03
Tanjore	99-08	47-82
Madura	28-48	22-39
Tinnevely	60-79	38-78

of the cost of baskets and tools, which is trifling, is divided amongst the partners, the owner of the pan, when he works with his own hands, being allowed an extra share on account of the use of the pan. The same arrangement prevails in Vizagapatam, where sub-renting for fixed sums is rare, occurring only at Bimlipatam, Pentakotta and Konada. In Kistna the share of the registered owner in such a partnership becomes a fixed sum, from Rs. 10 upwards according to agreement; in Madura it varies from $\frac{1}{2}$ to $\frac{1}{3}$ the net kudivaram; and at Vizagapatam in Tinnevely where this system of sharing also exists, the owner's share is one-fourth. In Godavery the registered owner sometimes employs a sub-contractor who finds coolies, and the wages of the coolies are paid according to the proportions agreed on by the owner and the sub-contractor. The kudivaram is then divided in the same proportion. But by far the most common form is where the labourers are paid, not by fixed wages, but by a share of the kudivaram. The percentages given in the second column in the margin above shew the proportions of pans not sub-let and worked without sharers by registered holders or their agents, chiefly with hired labour. The remainder of the pans are either sub-let for fixed sums or worked on the sharing systems above described, which may be called forms of a *métayer* system. The proportion assigned to the actual workers varies much; but, when the share of the owner exceeds one-half, he usually has to find tools, &c., and to provide for repairs and the formation of the beds.

541. The point which it is important to investigate in the present connection is the extent to which the kudivaram exceeds the actual cost of production, and on it the returns regarding sub-letting throw some light. The rates of rent realized for pans let out to be worked by others, or the share of the kudivaram which is made over to the landlord as such, and free of expense for tools, &c., is of course part of that excess, but not the whole. The pan-holders were, for the most part, originally labourers, and have merely occupancy rights, and the existence of the rent in question is probably to a great extent the result of increases in the kudivaram. The rent or owner's share will afford some basis for estimating the excess, as it will at least indicate the maximum limits of the cost of production. It of course varies much with the situation and productiveness of the pans.

542. In Ganjam, no money rents prevail, the sharing system being universal. There are 961 registered owners, and 4,919 labourers. Assuming that the pan-holders always work, the kudivaram will be divided into $(961 + 961 + 4919 =)$ 6841 shares; and the owner's share will be $\frac{961}{6841}$, or 14 per cent.; and will therefore vary from Rupee 1-5-6 to Rupee 1-8-2 per garce. In Vizagapatam money-rents are rare, occurring only at three stations. At Bimlipatam, they are from Rs. 6-10-8 to Rs. 40; at Pentakotta from Rs. 8 to Rs. 20; and at Konada from Rs. 5 to Rs. 14 per pan. Taking the last as representative, and assuming that the rates are for average pans, they would vary from Rupee 1-3-8 to Rs. 3-7-3 per garce out of a kudivaram of Rs. 9. In Godavery the rent is $\frac{1}{4}$ of the kudivaram; but there is a system under which persons contract to make salt for the pan-owner at rates varying from Rs. 3 to Rs. 4-8-0 at Mahalingapudi, from Rs. 3-5-4 to Rs. 5 at Nizampatam, and from Rs. 5-8-0 to Rs. 8 at Chinna Ganjam; the difference between these and the kudivaram, which is Rs. 10, being the pan-owner's share. In Nellore, the owner's share is from one-fifth to one-third the kudivaram; but there are sub-contracts for two-fifths and one-half when the pan-owner pays for preparing beds and storing. In the northern pans of Chingleput the usual statement is that the salt for which 1 anna 8 pies per maund or Rs. 12 per garce is paid costs 1 anna. Pans (alams) rent for from Rs. 6 to Rs. 12; but the most usual arrangement is to assign a share to the working men of half the kudivaram or Rs. 6, while the owner pays for preparing the pans and for picotials, &c., which cost on the average Rs. 2-2-1 per garce. The whole cost is then Rs. 8-2-1; and this computation differs very little from that which assigns to the pan-owner 8 pies per maund. At the other pans there are special rates of kudivaram, which produce exceptional rates of rent. In South Arcot, working with hired labour or with the manufacturer's own "padials" or labourers who serve him throughout the year, is the rule; but a few pans are worked on the arrangement that the sub-tenant pays a half or two-thirds share to the pan-owner. The Deputy Collector of Tanjore has furnished calculations of the cost and profit at each division in the district. These shew profit ranging from Rs. 3-4-4 at Tambikanallavankottai to Rs. 5-8-0 per garce at Negapatam. In Madura the owner's share is from one-fifth to one-half under the sharing system. The Deputy Collector has completely worked out the profit in 3 divisions on the different plans of working; and the owner's share ranges from Rs. 4 to Rs. 5-1-0 per garce, out of a kudivaram of Rs. 11-4-0. In Tinnevely the average owner's rent is 33 per cent. In this district a curious arrangement is sometimes made, under which money rents per bed are settled with reference to the quantity of salt estimated for the division and delivered in the year. The rate in these cases is said to be Rupee 1-6-0 for every thousand garce in the dittam; so that with a dittam of 2,500 garce at Levingepuram, the rate rises to Rs. 3-7-0 per bed. The regulation by Government of the amount made of course equally affects rents on the common system of sharing kudivaram, and is indeed probably in part the reason for it. In Tinnevely, as we have seen, pans are bought by money-lenders as investments. The pan-owners also in many cases, especially under the sharing system, make advances to their under or fellow workers at high rates of interest; but these advances are often very precarious.

* Letter from the Collector of Chingleput, para. 11, and Minute of Mr. Goblingham, para. 14, printed in Appendix to Mr. Ploeden's report, pp. clxxxiii and clxci respectively.

† Brahmins and persons belonging to non-manufacturing castes.

543. The facts just stated tend to shew that there is room for considerable reduction in the profits of the manufacturers, and in further support of this opinion we may refer to Dr. Ratton's oft repeated strictures on the excessive cost of production at present in the works of the Madras Presidency. One of the causes to which he adverts, viz., the smallness of the holdings, excise will tend to correct; for salt such as would command the higher prices cannot be produced without large reservoirs, and probably holdings will be clubbed to afford the necessary space. The tendency to reduce the size of the alams, which is by some believed to exist, will at any rate be checked; and, so far as excise, by introducing competition, affords inducement to manufacturers to adopt improved processes, it may bring about a decrease in the cost of production as well as improvement of the quality of the salt. We have already called attention to various incidents in the present system which tend to enhance the kudivaram payments, e. g., the delay in storage, whereby ryot's wastage is enhanced; the loose control which permits over-storage at the ryot's expense; and the maintenance of too numerous works whereby uncertain demand is created. It seems to us not improbable that the cost and manufacturers' profit may be reduced through competition by 6 pies a maund, or more.

544. We may on this point quote without irrelevance the experience under excise and qualified monopoly in Bombay. We are not of course individually fully acquainted with the circumstances of the manufacture in that Presidency, but we are aware of no cause which would make production markedly cheaper there than in Madras. The works in the latter have the advantage of copious brine supply, and of irrigation for the most part by direct flow, and against the difficulties of obtaining and raising brine in Madras must be set the high cost of maintenance of embankments and other protective works necessary in Bombay, but not so in Madras. The average price of Bombay salt taken all round was 1 anna 7 pies in 1874-5, and 1 anna 10 pies in 1875-6, when owing to special causes the price was high. It is stated that Rs. 7-8-0 per "ana," or 1 anna 9 pies per maund, is a fair average for salt of ordinary good quality, sifted salt and that exported to Malabar being excluded. These rates include ground-rent cess which averages about 2 pies per maund sold. Mr. Hume, writing in 1867-8, (*Vide* Inland Customs report of that year), stated that the cost of production and selling price at Uran averaged respectively 9 pies and 1 anna per maund. At sea-coast works in Guzerat where a qualified monopoly is in force, Government fix a selling price of 1 anna 3 pies per maund, and for this sum, not only do the manufacturers bear charges of every kind (wastage, storage and works), but they frequently allow the sellers a drawback on the Government maximum price. These facts seem to shew that, leaving quality, to which we will presently refer, out of account, the payment to manufacturers in Madras is too high. In this connexion, the constant tendency of all charges entering into the cost of salt to increase under monopoly must not be overlooked. Sufficient evidence of this tendency has, we think, been accumulated in this report.

545. The cost of supervising establishment and preventive force is supposed to be recovered by an equable cess. That, as compared with the existing state of things, there would be increased expenditure under these heads there can be little doubt. But caution must be observed before this is set down to the change. We shall discuss under the second head, that of effect upon the Government revenue, whether the excise system requires a more expensive establishment than a monopoly. We may here say that we do not think the difference will be great.

546. The first-hand selling price of the salt would also be increased, should the excise system tend to develop a class who would intervene between the actual maker of the salt and the first link in the chain of the agency of distribution. Such a class might be either in the nature of the transferees or mortgagees of the manufacturer's holding, or of agents as between seller and buyer. The class is not one to be encouraged in either aspect, though, if we understand para. 636 of Mr. Plowden's report aright, that officer ex-

pressly contemplated the intervention of capitalists, on however small a scale, who, so far, would tend to enhance the first price by increasing the number of intermediaries. The case of the contractors, as they are called, who have appeared under excise in Pooree, and who have added two annas to the first price of the salt, as their own profit, is one in point; and any measures which would tend to create such a class of men are to be deprecated. The maintenance by Government of the storage platforms and of larger works requiring comparatively heavy outlay, would, perhaps, enable the ryots to dispense with these middlemen in the aspect of capitalists advancing money for works.

547. In this connexion we would notice the proposal contained in the memorandum submitted by Hon. P. Macfadyen to Sir W. Robinson (see pp. xiv and xv., Appendix E) copy of which the former gentleman was good enough to forward to us; also certain other suggestions to the same effect which we received when on tour with reference to the Ganjam and Vizagapatam pans. The proposal to make over the works already in the hands of ryots to capitalists, in fact to farm the existing works, does not appear to us one that should be adopted. By following this course, Government would be preventing what, we think, should in all legitimate ways be encouraged, immediate contact between the manufacturer and the trader, and would create private monopolies—a course, indeed, distinctly proposed in the Hon'ble P. Macfadyen's memorandum. But should merchants in the position of Messrs. Arbuthnot and Co. be willing to embark in salt manufacture by the opening of new pans under an excise, we think every encouragement should be given to them. Such competition would probably have a wholesome effect on the quality of salt manufactured in the old established pans, and might pave the way to the introduction of better methods of manufacture.

548. At present the manufacturer is practically certain of a market for his salt, if it reaches a certain standard. Under excise he will have to look out for a buyer, and there is here, we think, some danger of the number of intermediaries being increased by an agent or broker. We learn, however, that in Bombay the manufacturers themselves embark in the work of distribution. In such a case the number of intermediaries would actually be diminished, but, except where large numbers of pans are already in the hands of local capitalists, the case is not very likely to occur. We fear too that there is some danger of decrease in the amount of small purchases at the works themselves by petty dealers and hawkers. This class of buyers is, we believe, much more numerous in this Presidency than at the Bombay works, though the fact is to some extent attributable to the situation of the latter. These direct purchases at the Madras works undoubtedly tend much, particularly in the coast districts, to cheapen the salt to the body of consumers, by minimizing the cost of distribution; and if an excise system, owing to the disinclination of the manufacturers to take the trouble of effecting small sales, were to raise up a new class of wholesale dealers as first purchasers, who would take their profit from the price, the consequence would be one to be regretted.

549. Excise is not likely to affect the number of intermediaries between the first *bona fide* purchaser for trade and the consumer, nor, as far as we can see, would the rates of profit be greatly modified. They are already low, as we have shewn in the chapter on retail prices. If, however, there be any marked improvement in the quality of the salt in the direction of reducing the percentage of chloride of magnesium, the wastage in transit and in store would diminish, and *pro tanto* there would be margin for a reduction in second-hand and third-hand selling price. But, perhaps, this effect would be most felt by the manufacturer and should be taken into consideration in estimating first-hand price. We think, moreover, that the appearance in the market of several qualities of salt may tend to stimulate competition in trade and so tend to keep rates low.

550. In the above remarks we have purposely for the time left almost entirely out of sight a most important consideration, that of the probable effect of the change of system on the quality of the salt manufactured. For in fact any improvement in quality in the way of reducing the percentage either of magnesium chloride or the other active impurities, or of the total impurities both active and inert (so increasing the percentage of sodium chloride) is either directly or indirectly equivalent to a reduction of price. In this way we believe that the action of an excise, by developing competition among the salt workers, would be most beneficial. Under a monopoly it is not the interest of the manufacturer to make good salt, but only such as will pass muster, and we think that the defect is one for which under a monopoly no thorough remedy can be provided. The only means yet devised is the persistent rejection of inferior salt, but this method is capricious and uncertain. The superintendents with whom the decision must practically lie would all work with different and probably inadequate notions of what salt ought to be, the rejections to be effective would have to bear a high proportion to the salt made, and this would entail considerable hardship on the manufacturers and expose the rejecting officer to odium which it would require some devotion to duty to face with perseverance. There would be no continuity in the efforts made, and the progress made by one superintendent would probably be lost under his successor. Doubtless improvement might be effected by offering a larger price or by maintaining a very strong staff of experts at each work; but either measure would be very expensive, even if the experts could be obtained at all, and the self-acting competition introduced by excise would, we believe, improve the quality without enhancing the price.

551. In the item of cost of carriage the price to the consumer can be affected by the change only through the gradual action of the excise system in closing inferior works. The local circles hitherto supplied from such works will have to draw their salt from more distant sources, and the average cost of carriage of salt will be to that extent raised. But, even if the existing works were weeded out to half their present number, it would still remain true, as remarked in the chapter on retail prices, (para. 493), that no point in the Presidency would be more than 100 miles distant from a salt work or a depôt in direct railway communication with a centre of salt manufacture. And it must be remembered that the works with superior advantages would act in destroying the others only by supplying a salt able in point of cheapness as combined with excellence to drive out its competitor, notwithstanding the greater cost of carriage.

552. A further cause of enhanced price to the consumer would arise out of a deficiency of supply, a case we have not hitherto considered. The experience of Bombay appears to shew that stocks are lower under an excise system than under a monopoly, the quantity in store at the beginning of the year there being on an average about half a year's supply, whereas in Madras the average stock at the time of year when there is least salt in store is about a year's supply. But we believe that there has never been failure of supply in Bombay, whereas there have been protracted stoppages of sales at individual monopoly works in Madras, though, on the whole, the stocks have been adequately maintained. The works in Vizagapatam have often been without salt, and so have those at Merkannam, Killai, Négapatam and Adrampatam, and possibly others. But under an excise the works which are now not worked up to their full power would probably be so worked at least for a time. We do not think there is any serious danger under this head, if excise be introduced gradually. Any local shortness of supply would probably soon right itself; if not, while the change was in progress Government would have the means of throwing in salt where it was wanted. That ultimately the ordinary course of trade would meet the supply we have no doubt, for nothing is more striking than the rapid sensitiveness with which the trade adjusts itself to new conditions.

553. To sum up our conclusions as to the probable effect of the change on the cost of salt to the consumer. We think that there is warrant for expecting a decrease of 6 pies a maund in first-hand selling price; that there is, however, some danger of part of this reduction being intercepted by new intermediaries, and that on the average the cost of carriage will form a slightly larger item, as the average distance the salt has to be carried will, if works are gradually reduced in number, tend to increase; but that any disadvantages under these heads are likely at least to be compensated by the improvement in quality. On this point we take a more sanguine view than that expressed in the letter of the Government of Madras cited at the beginning of this chapter. We believe that under excise the average quality of the salt would improve, and that the people would not be slow to discover that a purer salt is really a cheaper salt too. They may never have heard of chloride of sodium, but they know practically how far a given quantity of any particular salt will go in seasoning their food. Nor are we of opinion that there is any risk of a permanent shortness of supply and consequent increase of price. We would not assert that there may not be local enhancements or even for a time a general increase of price, but we think that in the long run, when an excise system, if introduced, shall have had time to settle itself and trade to adjust itself to new conditions, a decrease rather than an increase of cost to the consumer may be anticipated.

554. The next question is the probable effect of the change upon the revenue. An injurious effect on the net revenue might be caused, (1) by a reduction in the amount consumed, (2) by an increased danger of illicit clandestine manufacture necessitating an addition to the preventive force, or (3) by additional danger of illicit removal of salt from recognised works.

555. A reduction in the quantity consumed could only be brought about by actual shortness of supply or by enhancement of price, but we have already stated our reasons for believing that neither of these effects will permanently result from the change. At the same time it should not be forgotten that the excise being levied on 'salt,' whether it contain 80 or 99 per cent. of sodium chloride, an improvement in quality is in one aspect an actual loss to the exchequer. Thus, supposing the tax were so low that practically every one got as much of the condiment as he wanted, an improvement in the percentage of sodium chloride would actually tend to diminish the revenue, for each man, finding that an equal quantity of the improved salt went further than before, would buy less of it. Such a result brought about by such a cause is, however, hardly to be deprecated and if the sodium chloride contained in the salt of commerce became cheaper, there would be the wider margin for enhanced duty, even if the cheapness did not foster increased consumption. This feature in the mode of incidence of the tax is a direct encouragement under an excise to the manufacture of the better kinds of salt.

556. It is now, we think, generally admitted that the mere substitution of excise for monopoly can introduce no change in regard to the danger from illicit manufacture. The area to be watched and the points of chief peril remain the same as before, while the inducements to illicit manufacture are neither increased nor diminished.

557. The third point is more difficult. Salt may be stolen either from the pans or from the stored heaps, or it may be carried away under a permit in excess of duty-paid salt, with the connivance of the supervising and preventive establishment. In regard to theft from the pans, the danger appears equal under either system; of theft from the stored heaps, there is perhaps slightly more risk under an excise from the greater number of heaps open at a time. The third method of fraud is the one most difficult to guard against, and various arrange-

ments have been adopted in the attempt to check it. In Madras, as we have seen, under monopoly reliance has been placed on a storage account and a testing of keaps by Deputy Collectors and Collectors to check its accuracy. This system has not been efficiently worked, the test having been altogether too laxly applied. It is also true that the uncertainty of wastage introduces an element of difficulty into this plan. Wastage has to be allowed for, and it is impossible to say whether the wastage claimed in a particular case is the real physical wastage or not. In Bombay under excise the chief reliance is placed on a system of check weighments. After being weighed at the works every consignment of salt has to pass a preventive station where 25 per cent. of the despatch is re-weighed. This check depends for its efficiency on the honesty of the official charged with the check weighment, and that can only be secured by frequent inspection by superior officers. It seems to us that there are difficulties in the way of maintaining a record of in-weightment under an excise system, and that at any rate it cannot under that system remain the sole check. Hence some re-arrangement of the establishment would be necessary and possibly some increase of cost. But on this we cannot speak positively; it would be for the head of the department, after consideration of both methods of check to recommend what arrangements he might think best.

558. It has been strongly urged that a system of preventive stations and check weighment is essential even at monopoly stations, but we are not prepared unanimously to recommend this as a necessary measure, though it is a point which might receive attention if, as we in any case recommend, the administration of salt revenue in Madras is placed under a separate chief.

559. To sum up, then, we are of opinion that there are no insuperable practical difficulties in the way of change from monopoly to excise, and that the measure is not likely to prove injurious to the interests either of the consumers of salt, or of the imperial revenue. We regard it as the most hopeful means of bringing about the improvement which is desirable in the quality of the salt, and of giving to the Madras Presidency the share in the trade for the supply of other parts of India and of Burmah and adjacent countries which its natural advantages and geographical situation should enable it to command. We, therefore, recommend that steps be taken for the introduction of excise.

560. We would here, before stating our opinion as to the most suitable places to begin with, notice briefly the argument against the change which we may style the "let well alone" argument. It will be urged that under monopoly a magnificent revenue has been realized at small cost; a fair rate of licit consumption has been secured; the supply of salt has been generally adequate, and it has been distributed, and the revenue got in, with a minimum of annoyance and cost to consumers; the salt is not unwholesome; and that it would be unwise to imperil such a state of things by radical changes. All this is no doubt true; but it is also true that much revenue is now lost, owing to inefficient prevention of illicit consumption, to lax supervision at the works, to careless and piecemeal administration, and to measures which in fact amount to remission of the tax. Considering the laxity everywhere apparent, we have often been amazed at the results attained, which, notwithstanding the smuggling which does exist and the frauds on the revenue which we have noticed in chapter III, argue on the whole a scarcely credible degree of respect for law and of tractability in the people. We trust that this report has shewn that some very drastic changes will have to be introduced into the present system, even if monopoly is continued; and we are convinced that in the most important respect in which improvement is necessary, viz., the quality, physical and chemical, of the salt, material improvement is hardly to be expected under monopoly. Change is of course attended with some risk, but the risk is not in our opinion great, and the object in view would justify the incurring of one much more considerable than is involved in

the change to a system of excise. We are not aware that, beyond the argument to which we have just adverted, any others have been advanced which may not be resolved into assertions upon points which we have discussed and upon which we have stated our opinions in this chapter.

561. With regard to the places where the excise system should be first started, it is obvious that large works, with a certain demand, where the all-important requisite of adequate competition among the manufacturers could be secured, must be selected.

562. These conditions exist nowhere in such perfection as at the Northern Chingleput works; the change would be started there under the immediate supervision of the proposed head of the department, whose head-quarters would be close by; and the station is one which in all proposals made for excise has been selected for its first introduction. A difference of opinion has, however, occurred amongst the members of the Commission as to whether the change should be at once introduced at these works and, as the point is one of importance, we trust we shall be excused if we state our individual opinions upon it. The President and Mr. Adam, urging the reasons above stated, are in favour of commencing at Madras. Messrs. Geoghegan and Stokes, while admitting the force of these arguments and fully recognising the advisability of bringing excise into force at the works in question as early as possible, think that the consequences of any difficulty about manufacture or increased price at Madras, which supplies an enormous tract of country, would be so formidable, and that the revenue affected is so considerable, that the experiment should first be tried elsewhere, and they observe that the importance of the place as a centre of supply has enormously increased since Mr. Plowden recommended immediate change there. Mr. Venkaswami Rao dissents altogether from the recommendations in favour of excise made in this chapter, but thinks that, if the experiment is to be tried at all, it should be tried at Madras. If excise is introduced at Madras, storing platforms will have to be provided at the pans, and the recourse of traders to the locality will necessitate a very strict guard of the banks of the canal and of the limits of the pans generally. The necessary storage works will have to be undertaken by Government. It is almost needless to remark that the largest possible stocks of Government salt should be accumulated at the Madras depot before excise is started. The platform there will be required for some years for the storage of the stock which it will be necessary to retain until excise gains a footing.

563. We think that Covelong should be at once placed under excise, and that every facility should be given for the opening of new excise works at this place, which, in the opinion of some persons, is a more favourable site for manufacture than Ennore, and is destined ultimately to supplant it.

564. Another locality in which, we think, excise should be at once started is Tuticorin and the neighbouring works, Levingepuram, Sivandakolam and Arasadi. These are admirable sites, the manufacturers are well-to-do, and, as the railway trade develops, the works will probably draw to themselves the supply of the two southern districts and of a large part of Coimbatore.

565. Other favourable localities for the introduction of excise are Negapatnam and Vedaranyam; Merkanam in South Arcot; the group formed by the three northern works in Nellore and Chinna Ganjam in Kistna, on which there is a large inland demand, and where adequate competition would exist; and the two large stations of Nowpada and Womeravilli, which would compete healthily with each other. As for the Ganjam station,

we do not think that the conditions necessary to success would exist unless measures be taken to enable the Pooree karkach manufacture to compete, which, as will be seen hereafter, we are of opinion it cannot now do. But before excise is commenced at places so remote, it should first be got into working order in places favourably situated nearer head-quarters, where it would have the continued attention of the officer charged with carrying out the change.

566. For, though differing in opinion as to the places where excise should be at first introduced, we are entirely agreed that the change should not be made at all unless a special officer is appointed to supervise the measure. It is, in our view, also essential that he should give his whole time and attention to the task, which will need care and tact and unremitting exertion, to carry out successfully. He should moreover frequently and for days at a time visit the works at which the new system may be introduced. It will be quite impossible for Collectors to give the subject the undivided attention needful to ensure success, and a single head is further desirable to ensure uniformity in the general method of proceeding, as well as promptness in decision, and firmness in carrying out measures resolved on. The officer charged with the duty must, if the change be ordered, undertake it in no half-hearted spirit, but with a resolve to use all fair means to make the measure succeed, and we doubt not that he will be supported in the same spirit by the higher authorities. The existing system has been in force for more than 70 years, and has, of course, struck many roots in the habits and prejudices of the people, which cannot be torn up without exciting considerable misapprehension and opposition. Great care should therefore be exercised in the selection of the officer entrusted with the duty, and a considerable measure of independence in executive details should, in our opinion, be given him.

567. We will end this chapter with a few remarks on the law under which an excise system, if introduced, will have to be worked. Madras Act VI., 1871, can be at once by notification introduced in any district or part of a district, and would probably suffice at first, till the officer in charge of the department should have discovered in what points his hands needed strengthening. But in two respects the law is, we think, obviously defective: (1) no provision is made for the recovery from the manufacturers of the cost of supervising and preventive establishment, and (2) the powers of the police are not laid down with sufficient clearness. They are, indeed, defined by Section 17 in certain cases, but this provision does not cover many of the forms of fraud on the revenue likely to occur. Moreover, though the Act enables the Government to pass rules, there is no provision for attaching a penalty to the breach of such rules.

568. One anomaly would result from the application of the act to specific areas, viz.:—that in one district or part of a district a person guilty (for example) of illicit manufacture would be punishable (leaving fines out of the question in both cases) by three months' imprisonment, while in the neighbouring district or part of a district the same offence would not involve more than ten days' imprisonment, nor would even that moderate term be awardable if the value of the salt exceeded Rs. 5. But this anomaly is not an objection to (Madras) Act VI., 1871, it is rather a further argument for the amendment of the existing law even for districts where the monopoly system may continue, at least for a time, to subsist. In the passage cited in Appendix C, No. 12, from the Ganjam Collector's report on the Palur case, it will be seen that he urged, if possible, the extension to that district of certain clauses of the Excise Act, the existing penalties being, he thought, inadequate, as indeed they seem to us to be. It was probably owing to the same cause that the failure of justice occurred in the Nowpada case (see para. 250.) Had the penalties under the salt law been at all suitable, the Principal Assistant would hardly have proceeded against the guilty parties as for theft.

CHAPTER X.—POOREE SALT.

569. The only specific reference to Orissa salt contained in our instructions is that embodied in the 9th Clause of para. 3 of the Resolution of the Government of India appointing the Commission, which runs thus:—"The Commission will also examine and report on the cost of manufacturing salt in Pooree and other salt works in Orissa which border upon the Madras Presidency." And among the papers forwarded to us by the Government of India along with its Resolution, the only allusion to the subject seems to be that in para. 4 of Mr. Hume's letter to the Government of Madras, No. 189, dated 12th June 1875, where the cost of manufacture of Pooree karkach or sun-evaporated salt is expressly contrasted with the low estimate of the cost of Ganjam monopoly salt framed by the Madras Revenue authorities.

570. We have, however, obtained from the Boards of Revenue, Calcutta and Madras, certain papers which must in some form be noticed, and it will facilitate the understanding of the question at issue, if we briefly consider the history of salt manufacture and salt supply in Orissa and more especially in Pooree.

571. Mr. Plowden's Bengal Appendix C, Nos. 3 and 6, contains a clear account of the system pursued in Orissa, while the monopoly was in force in the L. P. of Bengal. The various "aurungs" or places of manufacture spread along the coast from the Subanrekha river to the south bank of the Devi, and round the north-east and south-east sides of the Chilka lake. At two of the Chilka aurungs alone was karkach salt manufactured, all the rest of the salt produced in the province was pangá salt or salt evaporated by artificial heat. Inland from the aurungs at an average distance of 4 miles was drawn a line of preventive posts or chaukis, within which Government took into its own hands the retail sales and maintained shops for the vend of salt at very low rates, viz., Rupee 1-8-0 per maund for pangá and Rupee 1-0-0 for karkach in those tracts where the latter sort of salt was sold. It was a chief duty of the preventive force to see that no salt sold at the retail and cheap rates passed the chauki limits. In Bengal generally the supply of salt beyond that line was left to private enterprise, but in Orissa, lying as it does between the sea and a line of hills, and with the cheaper salt of Ganjam on its southern frontier, it was thought necessary to extend the limit of Government sales. Hence in each Orissa district, beyond the preventive cordon, two Government depôts were maintained where salt might be purchased under "rawanah" or wholesale pass in quantities from 20 to 100 maunds, or under "char" or retail permit in quantities from 10 to 20 maunds, at the following prices:—pangá in Balasore, Rs. 2-0-0; in Cuttack and Pooree, Rupee 1-14-0 a maund; karkach in Pooree (where alone sold), Rupee 1-8-0 a maund. Mr. Plowden proposed to call the sales at these internal depôts *local* sales, in contradistinction to the truly *retail* sales of the 4 mile zone. The price paid the malangis or manufacturers for karkach (with which alone we are now concerned) was 2 annas a maund, afterwards raised to 3 annas, and the total cost to Government of the karkach salt made was (at the lower rate of payment to the workers) estimated at Rupee 0-3-8 a maund.

572. The salt reserved for the supply of the interior of the regulation districts, of the Tributary Mehals and of the country west and north-west of those tracts consuming Orissa salt, was conveyed at the Government expense to the depôts. A fixed estimate was made of the consumption of each hill state (or Tributary Mehal), and no salt was to be supplied beyond that estimate. "It is supposed, however," writes Mr. Plowden, "that some of the estates (*sic*) are supplied altogether, and others to some extent, with the cheaper karkach salt of Ganjam."

* We may here at once observe that we have considered solely the question of the cost of sun-evaporated salt, which is made only in Pooree. We have not gone into the question of the cost of pangá, whether in that district or in the rest of Orissa.

And the following passage as to the tracts then supplied from Orissa may be here extracted:—

"Salt is also supplied from the Cuttack salt depôt, under rawanahs for consumption in the territories of Sumbulpore, Singhbloom, Chota Nagpore and other countries to the west and north-west of the hill Tributary Estates, not being within the prohibited provinces of Bengal and Behar. It is alleged that the supply of cheap karkach or solar evaporation salt, which the traders draw from Ganjam and Pooree, suffices for the consumption of these countries and enables them to sell the dearer pangâ or boiled salt, which they take from the Central Cuttack depôts, in the districts of the Behar province, so displacing to an equal extent, in those districts, the full-taxed salt carried by the Ganges.

"And here it may be observed that one of the reasons for selling Cuttack salt at reduced prices in the province is to create a market for that salt in the country beyond it, to the west and north-west. At present all that country, as far possibly as Sirgajh, is supplied principally with Pooree karkach and Central Cuttack pangâ. If the full Calcutta duty were levied on these salts, their export in that direction would, it is supposed, cease, (except in so far as they might be smuggled without payment of duty) and their place would be supplied partly by untaxed salt from the west, and partly by Ganjam salt, the profit upon which is considerably less than that on the Cuttack produce."

573. The following table approximately exhibits, according to Mr. Plowden, the distribution of the salt sold in Orissa during the year 1853-4:—

1	Quantity of salt sold.				
	2	3	4	5	6
Districts.	From Government retail stores for consumption within the limits of the preventive column.	From Government depôts in the hill-tracts for consumption in the plains country or "Mughulbandi" side column.	Total of cols. 2 and 3, i. e., total sales for Mughulbandi consumption.	From Government interior depôts for export to tributary Mahals and country beyond.	Grand total sold.
Baharore.....	Maunds. 13,541	Maunds. 70,260	Maunds. 83,801	Maunds. 20,772	Maunds. 104,573
Cuttack.....	8,132	59,888	68,027	125,337	193,364
Pooree.....	14,682	122,223	146,905	104,261	251,166
Total.....	36,355	252,421	288,776	230,370	519,146

574. What was not wanting for the supply of the province and of the tracts supplied through it, was sent to the Sulkea stores near Calcutta, and it was mainly as feeding those stores that the Orissa manufacture was, while the monopoly survived, maintained. The following figures of manufacture and sales respectively will shew this clearly enough:—

	1854—55.	1855—56.	1856—57.	1857—58.	1858—59.	1859—60.	1860—61.
Manufactured in Orissa.	Maunds. 1,335,633	Maunds. 1,723,784	Maunds. 2,197,231	Maunds. 1,722,003	Maunds. 1,946,240	Maunds. 2,106,469	Maunds. 2,662,103
Sold in Orissa.....	622,119	637,636	630,645	636,922	638,092	645,629	643,001

While the sales kept very steady, the manufacture was zealously pushed till it reached its acme in 1860-61. The next year, Liverpool salt made a marked stride in popularity in the Lower Provinces of Bengal, and the Orissa manufacture fell to 1,343,639 maunds; in 1862-3 it did not reach 300,000 maunds, and in 1863-4, it was discontinued altogether, and the Government manufacture of salt in the Lower Provinces was extinct. As a natural consequence of the cessation of manufacture, the system of retail sales at low prices within the narrow coast-zone was discontinued, and the Board reported the entire cessation of such sales in 1862-3.

Cessation of Government manufacture.

575. Meanwhile the selling price of Pooree karkach had been raised to Rs. 2-4-0 a maund, and in 1861 it was proposed to levy the full Bengal duty of Rs. 3-4-0 a maund on all salt sold in Orissa. Up to 1861 the difference between the prices of the two salts, (Ganjam and Pooree karkach) had not been sufficient to encourage the import of Ganjam salt into the plains of Orissa, where a prejudice against it then existed. No complaints are heard of the intrusion of Ganjam salt into the markets of Orissa proper, and the steadiness of the total Orissa sales seems to indicate that the salt of the province held its own in external markets too. But when it came to be a question of selling sun-evaporated salt at Rs. 3-8-0 a maund in Pooree, at the same time that it could be had for Rupee 1-8-0 a maund in Ganjam, the necessity of adopting some measures to protect the revenue leviable at the higher rate became obvious.

576. The Bengal Board of Revenue in 1861 consulted the Madras Board as to the possibility of raising the duty in the northern districts of Madras, but the suggestion was not favourably received. Attention was then for a time turned to the best way of excluding Ganjam salt unless it should have paid full Bengal duty, but the Government of Bengal in 1863 again pressed on the Government of India the proposal that the tax in Ganjam and Bengal should be equalised. This solution of the difficulty did not commend itself to the Government of India, and when the full duty began to be levied in Orissa, i. e., from 1863-4, the sole protection afforded to the Bengal revenue against the influx of the lower-taxed salt of Ganjam seems to have been an injunction issued to the Collector of Ganjam to levy full Bengal duty on salt declared for Orissa. It is hardly to be wondered at that Mr. Shore in January 1865 should write that Madras salt was "very largely consumed in the Garhjats, and to some extent even in the Mughulbandi portion of the province." The following table, together with the explanatory remarks, shows clearly the falling off in the sales in Orissa, and how in the Orissa salt lost ground in the markets outside the limits of Orissa proper, its place was supplied by the salt of Ganjam and Vizagapatam:—

Statement showing salt sales from Government stores or out of bonded warehouses or custom houses in Orissa, Ganjam and Vizagapatam, for the years 1857-58 to 1875-76.

Years.	Balasore.	Cuttack.	Pooree.	Total Orissa Districts.	Ganjam.	Vizagapatam.	Total Madras Districts.	Grand Total.	REMARKS.
1857-58	Maunds. 143,384	Maunds. 118,439	Maunds. 374,859	Maunds. 636,682	Maunds. 692,986	Maunds. 172,700	Maunds. 835,686	1,502,608	The Orissa sales are given for the old Bengal salt year (1st October to 30th September) down to 1862-63 inclusive. The sales for the period, 1st Oct. 1863 to 30th April 1865 have been divided by two and half allotted to 1863-64 and half to 1864-65. Thereafter the sales are for official years. But it must be remembered that the first day of the official year was changed from 1st May to 1st April in 1869.
1858-59	146,215	129,339	342,538	618,092	632,187	170,921	833,108	1,521,200	The Ganjam sales are given for the Fashi year (1st July to 30th June) down to 1859-60 inclusive; afterwards for the official year.
1859-60	132,497	198,674	313,458	644,629	670,398	176,130	854,737	1,500,366	The Vizagapatam sales are given for Fashi years down to 1864-65 inclusive; then onwards for official years.
1860-61	105,230	205,002	334,739	645,000	728,759	186,427	915,196	1,558,197	It is noteworthy how in the four first years, while manufacture was in full play in Orissa, both the total sales and their distribution between Madras and Orissa, remained approximately constant. But the moment the manufacture in Orissa begins to decline and the selling price of the salt left in store is raised, the Ganjam and Vizagapatam sales begin to show a marked upward tendency. It would not, however, be right to conclude that the diminution in the Orissa sales in the period from 1861-62—1867-68 inclusive, fell entirely on the sales for export beyond Orissa proper. This was not so, for the province had ceased to be self-supporting in the matter of salt, and began to import Panga salt from the north-east. This is evident from the figures of sales in Cuttack and Balasore in 1865-66—1867-69, after making full allowance for the disturbance of trade by the famine.
1861-62	89,094	150,206	338,619	577,919	672,163	214,913	865,895	1,464,801	
1862-63	95,331	118,760	210,692	424,803	765,959	200,967	945,226	1,401,729	
1863-64	89,423	114,363	172,583	377,369	685,480	199,987	1,023,467	1,415,826	
1864-65	89,423	114,363	172,583	377,369	608,017	201,758	1,104,775	1,482,144	
1865-66	89,423	114,363	172,583	377,369	608,017	201,758	1,104,775	1,482,144	
1866-67	...	3,131	226,313	229,374	816,612	189,267	1,035,551	1,255,255	
1867-68	43,213	19,019	222,437	285,169	780,335	159,281	939,616	1,224,605	
1868-69	62,633	48,152	184,209	295,095	831,363	184,502	1,015,868	1,310,924	
1869-70	51,747	39,921	191,351	323,019	706,079	179,929	876,999	1,200,018	
1870-71	33,481	22,223	137,480	253,184	774,921	177,922	952,843	1,206,027	
1871-72	111,119	32,844	162,603	306,566	831,954	148,349	980,803	1,287,369	
1872-73	142,125	19,973	223,340	392,741	626,921	195,408	893,229	1,285,070	
1873-74	114,845	41,032	210,584	366,461	827,929	233,362	1,061,291	1,427,752	
1874-75	145,677	16,232	247,717	409,626	746,864	272,695	1,026,499	1,436,182	
1875-76	157,973	12,906	168,666	335,827	657,885	352,362	1,291,548	1,630,100	

577. In January 1866 the Government of Bengal again urged an enhancement of the duty in the tract between the Orissa frontier and the Godavery, but the measure was strongly opposed by the Madras Board of Revenue and the Madras Government, and was not adopted by the Government of India. Meanwhile, though a preventive cordon was drawn between Pooree proper and Ganjam, yet even for consumption in Cuttack the importations of Ganjam salt gradually increased, till, in 1870-71, they reached 74,526 maunds. In these years too the local Orissa manufacture began to revive under a system of excise, first in Balasore and afterwards in Pooree, where in 1870-71, nearly 4 lakhs of maunds of karkach salt were made. But this rate of manufacture was not maintained.

578. In 1872 a correspondence arose out of the fact that several of the routes to the Central Provinces lay through the Orissa Tributary Mehals and one even through the regulation province. The Government of Madras claimed that salt for the Central Provinces should be allowed to traverse these intervening tracts under the protection of a Ganjam rawnah, but the Government of Bengal contended that at any rate the salt passing through the plains of Orissa should pay full Bengal duty, and was supported in this view by the Supreme Government, who even remarked (in Mr. Hume's letter to Government of Madras, No. 12, dated 10th June 1873), that it might "possibly be necessary to take such steps as would effectually close to the Ganjam lower taxed salt the country which ought to be occupied by the more highly taxed salt of the country north of the line."

579. Soon afterwards however other counsels prevailed and the result was Act X. (India) 1874, and the notifications thereunder, in forwarding which to the Government of Bengal, the Supreme Government observed "that, under the arrangements therein legalised, all interference with the import of salt from the Presidency of Fort St. George by land into the territories under the Government of Bengal would cease to be necessary."

580. But the Government of Bengal did not interpret this to imply that Ganjam salt imported into Orissa was to be exempted from the rules passed under the Bengal Salt Act of 1864, to which indigenous and sea-borne salt were equally liable. Certain rules were, therefore, submitted for the approval of the Government of India, which it was intended that Ganjam salt should obey. That Government, however, disapproved altogether of the rules, though ready to sanction some less stringent regulations as a temporary measure, till the Local Government should mature a scheme which would "render interference with the internal transit of salt in Orissa altogether needless." Then followed a long correspondence between the local authorities in Orissa and Ganjam, on the question of the rules which Ganjam salt in Orissa was to comply, and the respective Boards and Governments were also invoked. It is unnecessary for us to trace its course. The Government of Bengal will doubtless under the instructions of the Government of India carry out such a scheme of prevention as may be decided upon. Our concern in the matter begins with the letter of the Government of Bengal to the Government of India, No. 1,283, dated 25th May 1875, and its enclosures, which raise the issue of the comparative position in the market of the salts of Pooree and Ganjam.

581. Mr. Ravenshaw, Commissioner of Orissa, having been instructed to submit exact particulars of the cost of Orissa salt, laid before the Calcutta Board of Revenue a statement which may be condensed in the following table as far as it concerns Pooree karkach. The statistics include the cases of four licensees or groups of licensees and seemingly refer to the season of 1873:—

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number of the case.	Quantity of salt weighed in.	Cost of preparing lands. (A)	Rent to Zemindar as Rupees 2 per 100 maunds made. (B)	Amount paid to salt-workers at 3 annas per maund. (C)	Cost of making or repairing storehouses. (D)	Establishment at the pans kept up by licensee. (E)	Compulsory establishment kept up at pans under salt rules. (F)	Storehouse establishment kept up by licensee for his own purposes. (G)	Storehouse establishment kept up compulsorily under the rules. (H)	Preventive police force maintained at the pans. (J)	Contingencies, as spices, blankets, ropes, &c. (K)	Total of columns 4-13, both inclusive.	Actual out-turn of salt as 4½ lb.	Cost per maund.	Average selling price per maund.
1	Maunds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Maunds.	A. P.	A. P.
2	57,041	100	1,711	10,695	400	410	204	648	918	426	700	15,212	60,394	4 3	8 0
3	76,629	550	2,293	14,368	1,900	1,404	225	348	612	453	2,000	24,158	77,439	5 0	8 0
4	10,271	80	305	1,525	700	162	204	324	612	164	108	4,557	10,231	7 1 8	7 9
5	17,995	109	540	3,274	158	124	195	121	525	184	480	3,829	18,209	5 2	7 0
All four cases.	161,937	839	4,857	30,862	3,158	2,100	828	1,441	2,737	1,227	3,288	50,837	166,303	4 10 7	7 10

It will be seen that the average cost and average selling price are put by us at different rates from those given by Mr. Ravenshaw and adopted from him by Mr. Dampier. But in the first place there was an error in arithmetic in totalling the expenses in case (2); secondly, the Commissioner's method of arriving at averages, viz., by adding together the rates separately arrived at, one for each licensee, and then dividing the sum by four, is not legitimate; and thirdly, the divisor used in obtaining the rate per maund, should certainly be the number of maunds sold and not the number of maunds for which the malangis were paid. The excess of the former over the latter in three out of the four cases selected is not explained, though in at least two instances the excess is very marked.

582. For convenience of reference the several heads of expenditure have been marked with letters, and may be briefly noticed. The preparation of the pans falls on the malangis; it is probable that the item (A) is, in case 2, exaggerated. The items (B) and (C) depend on specific rates and will be noticed further on. The item (D) is probably exaggerated in case (2) and the same may be said of item (E) in the same case. In case (1) the details in the margin are given

about (E). It may be noted that six months is a long term for "aurang" or pan establishment in Pooree. Item E stands as in the margin for the 1st case and is nearly the same in the other three respectively. The strength and pay of this establishment is irrespective of the size of the work. The item G presents some apparent anomalies, as the largest stock does not cost the most in superintendence. But the details except in case (1) are not sufficiently given. Here the element of time comes in, as the establishment has to be maintained till the salt is sold. In case No. (1) the establishment is said to have been kept up for 18 months. Under item H the established scale appears to be 1 darogah at Rs. 40, 2 chaprasis at 5, 10; total Rs. 50 a month, with contingencies. The differences here again are mainly due to time. The owner in case (1) was less fortunate in selling his salt than the others. The aurang preventive force (J) seems to be kept up for four months. It is in some measure proportioned to the size of the works. Contingencies (K) are probably much overrated in case (2).

4 jiladars at 5 Rs. per mensem...	20
5 chati paiks " 1	32
1 golpahari " 4	4
2 chaprasis " 4	8
64 ox for 6 months, Rs. 354.	
Add 1 weighman at 5 "	5
2 stampers (chhapdars) 4 "	8
18 ox for 2 months, Rs. 26.	

583. No allowance is made in the Commissioner's calculations for interest on capital. But taking the figures of the first two cases as given by the men themselves and supposing them to have paid down at the outset of the enterprise the total expenditure and not to have received a penny till the last grain of salt was cleared, and allowing two years for this interval we find that at an average sale price of eight annas a maund, they must have made at the rate of 43 per cent. per annum in one case and of 30 per cent. in the other. If then Pooree salt could find a wholesale market at eight annas a maund exclusive of duty, there is little doubt that the manufacture would flourish, but the question is whether it can find such a market at that price.

584. Mr. Ravenshaw gives the average cost of carriage by bullock cart at 1½ pies per maund per mile, and, drawing from his figures the inference that the Pooree salt could not compete with that of Ganjam, he recommended that the duty on Pooree karkach should be lowered to Rs. 2-0-0 per maund.

585. Mr. Dampier, Member of the Board of Revenue, Lower Provinces, in charge of Salt, recorded a minute on the question in which he set forth the special reason which has often been urged for the encouragement of the Pooree manufacture, viz., that it affords a means of livelihood to a population whose means of subsistence are otherwise but ill secured. He adopted Mr. Ravenshaw's figures as to cost of Pooree salt, and recommended, as measures of relief to the manufacturers, (1) that the Collector of Pooree should be authorised to receive applications for the delivery of karkach on plain paper, (2) that the fees on the issue of rawanahs should be given up, and (3) that the Pooree manufacturer should be relieved of the charges on account of the preventive establishment entertained to watch manufacture and storehouses. The Lieutenant-Governor of Bengal supported Mr. Dampier's suggestions and proposed in addition that the duty on Pooree karkach should be reduced to Rupees 2-0-0 a maund.

586. The Government of India accepted (1) and (2) of Mr. Dampier's proposals, but absolutely disallowed the third. In regard to the proposal to lower the duty, the Government of India asked certain questions which perhaps need not be gone into here.

587. Some of the comments of the Collector of Ganjam on the correspondence between the Supreme Government and the Government of Bengal must be noticed, viz., the passages in which he compares the cost of carriage of the two salts. He remarks that Orissa salt can be carried at all seasons great part of the way to Cuttack, and in the rains the whole way, by boat. The ascertained average cost of carriage of salt from Ganjam to Cuttack by cart he puts at R. 0-7-4 per maund, whereas he estimates the carriage from the Pooree works to Cuttack in the dry season at R. 0-4-6, and in the rains at R. 0-3-10½ a maund. Similarly he gives the rates noted in the margin as the rates of carriage partly by land and partly by water for Ganjam salt travelling to Cuttack, per hundred maunds, and shews the advantage in favour of Pooree salt to be 11 pies a maund in one case, and 1 anna 6 pies in the other. He appears to think that he has thus shewn that

Cart from Ganjam to Rumbah.....	Rs.	4	11	0
Boat from Rumbah to Bisothiapenta	"	7	0	0
Cart hire thence to Cuttack	"	22	8	0
		34	9	0
and from Ganjam to Rumbah and thence direct to Cuttack by boat.....		34	11	0

* Per 100 maunds.	Rs.	A.	P.
Shipping charges	0	12	0
Boat to Bisothiapenta	5	0	0
Cartage	23	3	0
	28	4	0
	= annas 4-52 per maund.		
Shipping charges	0	12	0
Boat hire	29	0	0
Landing charges.....	3	0	0
	23	12	0
	= annas 3-8 per maund.		

Pooree karkach can compete with Ganjam salt on favourable terms at Cuttack. But he forgets that Pooree salt starts saddled with its cost whatever that may be, for the duty alone in Pooree is equal to the selling price at Ganjam. Now the cost of manufacture in Pooree has certainly never been less than 3 annas, a rate more than double the utmost advantage claimed by Mr. Davidson for Pooree salt. So that in fact his figures go to prove the very reverse of what he desires.

588. We visited Pooree early in February 1876. Crossing the Chilka lake from Rumbah we stopped a day at Barabkudi and inspected the stores of excise salt there and at Gopinathpur, examined the site of the manufacture, (we were too early to see the pans actually at work), and questioned the officers of police and the store-house establishment, as well as some of the salt-making ryots or malangis. We then proceeded to Pooree where we met the Collector and the Superintendent of Police. To the former we addressed a letter, the questions contained in which, with the replies of the Covenanted Deputy Collector in charge, (Mr. Millett having unfortunately been compelled by sickness to leave the district), will be found in Appendix B. During our stay at Pooree, Mr. Adam, moreover, in company with the District Superintendent of Police, made a tour of the several localities on the banks of the Chilka at which salt is made, recording notes of his observations at the time. And we examined verbally several of the salt licensees and salt-traders at Pooree.

589. The points for consideration appear to be (1) what has hitherto been the cost of manufacture of Pooree karkach salt, (2) in what way and to what extent that cost is capable of being reduced, more especially with reference to the cost of similar salt at Ganjam, and (3) whether, even at the reduced prime cost, the Chilka salt will be able to hold the market against Ganjam salt under present fiscal arrangements, and, if so, within what tract.

590. First, then, with respect to cost in the past. The following is a summary* of the figures of the four cases given by Mr. Ravenshaw :—

	Rs. A. P.			Incidences of cost per each maund sold.	
	Rs.	A.	P.	A.	P.
1. Rent paid zemindars (in form of a royalty on salt made)	4,358	1	6	0	5-60
2. Price paid to manufacturers or malangis...	30,363	3	0	2	11-05
3. Storage	3,158	0	0	0	3-60
4. Preventive establishment maintained by licensees	4,792	0	0	9	5-53
5. Establishment maintained by licensee for his own purposes	3,541	8	0	0	4-09
6. Works	838	8	0	0	0-97
7. Contingencies	3,288	0	0	0	3-79
Total charges ..	50,829	12	6	4	10-7

Now about the items 1 and 2 there can be no doubt, the rates were admitted on all hands and that paid to the salt-workers seems to have been handed down from the later days of the monopoly. The item comes out a little less than 3 annas a maund, because the calculation is made on the amount of out-turn, which curiously in three of the cases selected exceeded the quantity weighed in. Again the 4th item (establishment maintained under the salt rules) is known and can be checked. There remain items 3, 5, 6, and 7, for which we have to rely upon the word of the licensees. These aggregate Rs. 10,826 and may possibly involve some exaggeration. On the other hand, no entry is made for interest and the almost complete absence of wastage makes the cases chosen for illustration very exceptional. On the whole, it seems very unlikely that the cost was actually less than R. 0-4-9 a maund. This, would almost

* In the present case (1) = (B) of our previous classification of charges; (2) = (C); (3) = (D); (4) = (E) + (H) + (J); (5) = (E) + (G); (6) = (A); (7) = (K).

exactly agree with the estimate given in Mr. Plowden's report and quoted above, when the extra anna per maund paid to malangis was added, and would be something under the price* exclusive of duty fixed for karkach in the Bengal Government's notification of April 1863. To the larger manufacturers the cost would be somewhat less, to those who embarked a smaller capital in the industry it would be something more. But, the two first items in themselves giving a rate of R. 0-3-4-65 per maund, the limits of variation would never be very wide.

591. We now come to the second question, viz:—whether this cost cannot be reduced. The first item, royalty paid to zemindars, has already been reduced by one-half. Possibly, if the industry obtained a firmer basis, the zemindars might find it their interest to lower the rate still more. But this must remain a matter of free contract between the parties. The rate paid to the malangis is also probably capable of reduction. Indeed some of the salt-workers expressed themselves willing to make salt for 2 annas a maund, provided they were paid regularly. For, though the licensees declared that the manufacturers were always in their debt, the manufacturers were as loud in asseverating the contrary, and suits were certainly brought against some of the licensees for arrears of payment. In some instances the rate was actually reduced last season to 2½ annas, and it seems to have been on this question of rate that the civil suits just mentioned hinged.

592. At the Ganjam pans the salt worker receives only Rs. 11-0-0 per garco or R. 0-1-5-6 annas a maund for salt delivered, and it will be asked why the Pooree rate should be so much higher. There seem to be two main reasons for this, (1) that the Ganjam pans are much more permanent than those on the Chilka, (2) that the season of manufacture at Ganjam is longer and more assured. In respect to the first of these causes, it may be observed that the pans at Ganjam are on higher ground than the pans on the borders of the Chilka, which are always liable to be flooded. Under the monopoly the same pans are worked from year to year. This is not always the case in Orissa, as a licensee may abandon his enterprise or transfer his efforts elsewhere. Thus, the cost or labour of preparing the pans, which falls on the manufacturing ryot, is much enhanced in Orissa. On the second point the difference is even more striking. At the Ganjam pans a supply of sea-water of the ordinary density is always at hand, and manufacture can begin as early as the authorities please. We saw the pans being puddled and the reservoirs filled, when we passed northwards in the early part of February. In the Chilka, on the other hand, up to the end of March the water is such a feeble brine that it is unfitted for the manufacture of salt, and it is not till the south-westerly wind begins to bank up the sea-water and raise the general level of the lake from 6 inches to a foot, that the salts in solution reach a proportion sufficient to make it worth while to evaporate the brine. Thus in a good season manufacture begins in the end of March. The following table compares the proportions of the various salts contained in brine collected at three points on the Chilka, on the 12th February in the case of Barabkudi, and on the 18th idem in the other two cases, with the proportions contained in Madras sea-water :—

Percentage of	Madras.	Barabkudi mixed brine.	Gorapur.	Gurbai.
Sodium chloride	2-603	374	1-29	682
Magnesium chloride	281	063	087	024
Do. sulphate	182	...	081	007
Potassic chloride	121	...	...	...
Calcium sulphate	136	005	022	020
Do. chloride	...	005	...	...

* Rs. 346 — Rs. 325 = Rs. 31 per hundred maunds = Rupee 0 4 11-5 per maund.

The specific gravities were as follow:—

Madras sea-water.....	1,026.3
Barabkudi brine.....	1,001.5
Gorapur „	1,009.0
Gurbai „	1,005.0

The Gorapur brine was much cleaner and less offensive in smell than the others. From the position of Gorapur, the water was in close communication with the sea.

593. The above analyses shew how unfitted by its composition the Chilka water is for salt manufacture early in the year. But not only so, the level of the lake is then so low that even this feeble brine could not be conveyed to the pans except at considerable outlay. And while the season of manufacture is retarded at its beginning by the physical conditions of the Chilka, its duration is rendered precarious by the capricious rainfall. A good season may last till the middle or even the end of July; but heavy rain in June or so early as May may flood the pans, while freshes in the rivers feeding the lake reduce the strength of the brine and delay manufacture, even when it is possible to resume it. We obtained a table of rain-fall from the Civil Surgeon of Pooree, and it shews that there has always been rain in June for the last 10 years, in 4 years over 10 inches and in one of those years no less than 23.71 inches. The season being thus at the best of times not longer than 3 months and always precarious, it is not to be wondered at that the Pooree malangi should demand a higher rate than the salt ryot of Ganjam. Moreover, the greater distance of the stores from the pans increases the rate of payment to the worker. Both in Ganjam and Pooree the payment to the manufacturer includes delivery at the place of storage, but at Ganjam the platform is close to the pans, in Pooree the distance between the two varies from half a mile to 3 miles, and this cannot be avoided, for the nearest available ground raised above flood level is often a considerable distance from the pans. Finally, the certainty that he will receive his stipulated rate as soon as his salt is weighed into store, has doubtless much to say to the comparative lowness of the Ganjam manufacturer's rate.

594. The next item is storage. This, if we accept the figures given by the four licensees to the Commissioner of Orissa, comes to 3.60 pies per maund. In Ganjam on a 10 years' average it is about 1.5 pie a maund. Undoubtedly the storing in fairly built and substantial store-houses of bamboo and thatch, if persevered in, will be a more costly process than the method of storage in thatched heaps adopted at Ganjam, as elsewhere throughout the Madras Presidency. If, however, the works are concentrated, it may be possible to permit a cheaper plan of storage more like the Madras method. But it remains to be shewn that while the licensee is responsible for the duty on any deficit exceeding $2\frac{1}{2}$ per cent., it may not really be cheaper for him to maintain the closed and substantially built store-houses.

595. Under the head of preventive establishment required by law, have been included the three items marked (F), (H) and (J) in the detailed cases, i. e., both guards and check establishment on the pans, and the “darogas” and their subordinates in charge of the store-houses. The cost of police at Ganjam on an average of 10 years is given at about 5.5 pies per maund. In this respect the figures given by Mr. Ravenshaw do not compare unfavourably with Ganjam. Supposing the preventive establishments now maintained in Pooree to be on a sufficient scale, the average incidence of cost might certainly be reduced by concentration and combination in the manner suggested by Mr. Handley (see answer XVI of his letter in Appendix E). And if the salt is sold off more rapidly, the cost of establishment at the store-houses will be proportionally diminished.

596. The cost of establishment maintained by the licensees for their own purposes, showing only 4.09 pies per maund, is less than the cost of establishment at Ganjam which is about 5.6 pies per maund, but the comparison is not altogether

accurate. If we take the sum of the items (E) to (J) inclusive and set them against the united charge for establishment and police at Ganjam, the comparison stands thus:—

Pooree.....	9.62 pies a maund.
Ganjam.....	11.0 „ „

597. Contingencies are heavy in Pooree, but they are probably exaggerated. On the other hand, no entry is made on account of interest on capital or risk of wastage, and that this latter is no imaginary risk is shewn by the Covenanted Deputy Collector's report. Under the monopoly system, on the other hand, the risk of wastage is borne by Government, but in the rates for Ganjam salt which we have compared with those for Pooree this fact is taken into account.

598. As the Ganjam* statistics of cost have been cited for comparison, it may be well to reproduce here the figures on that subject, which will be found elsewhere. The charges on account of salt incurred at the Ganjam works for 10 years 1865-6—1874-5, both years inclusive, are shown below together with the incidence per maund of each class of charge, on the net quantity of salt available for sale, viz:—1,867,115 maunds.

	Rs.	Incidence per maund.	
		A.	P.
Value of land.....	4,093	0	0.4
Payments to manufacturers (kudivaram).....	1,78,078	1	6.1
Storage.....	14,559	0	1.5
Establishment.....	54,041	0	5.5
Contingencies.....	5,891	0	0.6
Police.....	53,650	0	5.5
Works.....	24,656	0	2.5
Total.....		2	10.2
Add interest on stock.....			1.3
Grand Total.....		2	11.5

The item for general supervision has been omitted as no such entry is made against the Pooree salt, though the supervision of the excise certainly taxes the time and labour of the authorities to an equal extent there.

599. Whether then we look at the possible reduction in the actual cost hitherto incurred in the manufacture, or compare the case of Pooree with that of the nearest Madras salt station, Ganjam, it appears unlikely that the actual cost of manufacture will ever be brought lower than Rs. 0.3-3 a maund as shewn in the margin. And this is probably a very sanguine estimate.

Estimated cost hitherto.....	Rs.	0	4	9
Deduct for reduced rates to workers.....		0	1	0
“royalty to zemindars.....		0	0	3
“more economical working and reduced expenses of guards, &c.....		0	0	3
Remains.....		0	3	3

600. We now come to the third question for consideration, viz: whether, even at the estimated future cost of manufacture, Pooree sun-evaporated salt can pay a duty of Rs. 2.4-0 and hold its own in any, and if so, in what markets, against Ganjam monopoly salt. Let it be supposed for the sake of argument that the Pooree licensee combines the functions of excise manufacturer, (or “contractor,” as under the recollection of the monopoly the licensee is still called), and that thus the profit of one middleman is got rid of, and let us compare the position of such a licensee desirous of bringing his Chilka karkach into the

* N. B.—Let it be remembered that in speaking of Ganjam salt, we mean salt made at the Ganjam station, the northern most in the Ganjam district, not the salt made at Nowpada or other works in that district.

market with that of a merchant purchasing salt at the Ganjam depôt. The former we assume to have got his salt to the depôt door for Rs. 2-7-3, money actually disbursed, for he cannot obtain a rawanah without actual deposit of the duty at Rs. 2-4-0 per maund. The Ganjam trader is allowed a period of credit if he chooses to deposit Government securities, (though this privilege is not much taken advantage of there), and if he purchases a whole heap he gets 5 per cent. discount. As a matter of fact, however, wholesale sales at the Ganjam depôt have, on an average of the past 10 years, only amounted to about 14 per cent. of the total sales, and the wastage on retail sales shows very nearly 5 per cent., so that we had better assume that the merchant pays the full sum of Rs. 2-4-0 per maund for his Ganjam salt. But he gets his salt by a much simpler and more rapid procedure than the trader in Orissa salt and, even in Orissa, "time is money." At Ganjam, on deposit of the price, delivery is at once and without difficulty obtained. Before salt can be cleared from an excise store in Pooree, the following procedure has to be gone through. The duty must be paid in at the Pooree treasury and application made there for a rawanah. Pooree is 16 miles from the nearest excise store. What between the treasury and the salt departments, delay in the issue of rawanahs is not unknown. Copies then have to be sent by the Collector to the District Superintendent of Police who sends one to the head police officer in charge of the storehouse where the salt is lodged. These formalities take time and, it may be suspected, cost money in the shape of douceurs to the ministerial establishments.

601. But let us suppose that each trader has got his salt delivered to him, and that they both intend to try their fortune in the Orissa markets. The Pooree karkach works and stores all lie along the strip of land which separates the Chilka lake from the sea. This tract is sparsely populated. It is all included in the Lubhah thana, the population of which by the last census was 16,073 souls or 102* to the square mile. The local demand, supposing a consumption of licit salt at the rate of 10 lb. a head per annum, would be barely 2,000 maunds. But such a supposition is inadmissible. To watch this tract there is kept up the following force†; 1 Inspector, 2 Sub-Inspectors, 5 head constables and 20 constables. But they have other general police duties to perform, and Mr. Handley admits that the "police have mixed up" their general and salt duties at the expense of the latter. Moreover, it appears to be understood that no action is to be taken against people making small quantities of salt for their own consumption, so that it may be very safely said that the Pooree trader would find no strictly local market. He must therefore seek an outlet either by Tangi on the north-west corner of the lake, whence he may supply the western part of Pooree, or by Pooree and the neighbouring marts of Damodarapur and Golasahi, whence the salt may spread eastwards and northwards in the district of Pooree, or by Cuttack, whence it may compete for the supply of the Cuttack district south of the Brahmini, (for that is said to be the limit of karkach-eaters), and of the Tributary Mehals and country to the westward.

602. Now the carriage to Tangi is put down by Mr. Handley at Rupee 0-1-9 per maund. This, however, is probably excessive, for the traders we examined at Pooree, gave Rupee 0-1-3 per maund as the carriage (including shipping) from the stores to Golasahi by boat, and the charge to Tangi can hardly be higher. Let it be taken at Rupee 0-1-3. At Tangi, the Pooree salt will encounter Ganjam salt brought thither by boat, while the Rumbah canal is open, by road or partly by boat and partly by road when the canal is closed. If the salt be carried all the way by boat, the cost of carriage from Ganjam to Tangi will certainly not exceed Rupee 0-1-9 per maund; if the salt travel by road, Tangi being almost exactly half way between Ganjam and Cuttack, the charge would be according to Mr. Davidson Rupee 0-3-8. Thus at Tangi, Ganjam salt would have an advantage over Pooree karkach if carried by the cheapest way of Rupee 0-2-9 per maund, if carried by the dearest way of Rupee 0-0-10 per maund.

* Mr. Beverly gives 34; but then he includes the whole area of the Chilka. That would not be fair for our present purpose, so we have taken the area at 47-313 = 157 square miles.

† We have taken Gurbai, Kishanprasad, Udaygiri, Nandla and Barabkundi police stations. The other stations are on the opposite side of the Chilka.

603. But if the merchant chooses to bring his salt to the river side stores of Golasahi and Damodarapur near Pooree he finds himself still under-sold by Ganjam salt. Mr. Handley puts the difference of carriage* at Rupee 0-0-9 per maund in favour of Pooree salt; the traders whom we questioned put it at Rupee 0-1-0, while the Rumbah canal was open. In any case the Ganjam salt will have an advantage of Rupee 0-2-3 per maund. At the time of our visit to Pooree, Ganjam salt was selling there almost to the exclusion of Pooree salt, the latter having been laid in at the rate of 7 or 8 annas a maund, and one of the traders informed us that Ganjam salt was penetrating into the east of the district. The consumption statements of the year 1875-6 also show that nearly one-third, (30,913 maunds out of a total of 96,246 maunds), of the quantity of salt eaten in the Pooree district was Ganjam salt. The proprietors of stocks were beginning to lower their rates, and one merchant had been selling even as low as 5 annas. But we have seen that even at the wholesale price of Rupee 0-3-3 the Pooree salt will be undersold.

604. In Cuttack the case will be much the same, for the route will in each case be up the Dayá river as far as there may be water and thence to Cuttack by land. The difference will then be the same as in the Pooree case and may be put at Rupee 0-1-0 per maund in favour of Chilka karkach, leaving a balance against it of Rupee 0-2-3 per maund. Indeed it is obvious that if the head quarters or focus of a more heavily taxed salt be once invaded by a salt paying a low rate of import, the competition must be still more hopeless elsewhere. For the limit between the consumption of the two kinds will always (if rates of transport be approximately uniform) be a curve having its concavity towards the source of the higher taxed salt. Thus the higher priced salt is at the best always liable to have its flank turned by the other.

605. In the above argument we have supposed that the one salt has no advantage over the other in its own quality or in the prejudices of the people. The following table compares the analyses of (1) a mixed specimen of Chilka salt, (2) an average specimen from the Ganjam pans, and (3) the average of all the analyses of salt from the Madras works.

	Moisture.	Insoluble matter.		Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.	Unaccounted for.
		In-organic.	Organic.						
Mixed Chilka	7.457	2.791	.092	86.148	2.044	...	.045	1.445	+ .022
Average Ganjam	6.712	.783	.060	89.137	1.873	.380	...	1.196	+ .142
Average Madras	9.281	1.730	.156	84.833	2.233	.185	.399	1.315	+ .138

The Chilka salt thus contains two per cent. more dirt than the salt of Ganjam, but, if that were got rid of, would stand nearly on a par with it in all essential respects. In point of cleanness, the Pooree salt analysed compares unfavorably even with the average struck on all the Madras specimens from works. If this defect were remedied, as it easily could be, there would probably be little to choose in point of quality between the Chilka karkach and salt from the Ganjam station. The specimen of salt from Nowpadah contained only 81.943 per cent. of chloride of sodium and no less than 2.815 per cent. of chloride of magnesium.

606. That the prejudices of the people will not stand in the way of their buying a cheaper salt may be inferred from the statistics of consumption in Orissa already quoted, and although the difference of price in the past has been much greater than what we have assumed as an estimate, (though probably a sanguine one), for the future, it is unlikely that the Ganjam salt, which is made in almost exactly the same way as the Pooree karkach and is quite as pure ceremonially, will not retain its hold of the market even at a less, though still quite appreciable, difference in its favour.

* He cites the town of Pooree itself, but all salt comes via Golasahi or Damodarapur according to the height of tides.

607. We think that there is little probability of the manufacture of Pooree salt reviving, unless it is put on an equality with Ganjam salt in respect to taxation. Should Ganjam be selected as one of the places for the introduction of the excise system, supposing the excise to be introduced, the desired equality can be brought about by imposing the same excise duty at both places. Some concentration of works would probably be of advantage both to the manufacturers and to the exchequer, as supervision and prevention would be both cheaper and more effective.

General conclusion as to prospects of Pooree salt.

CHAPTER XI.—RECAPITULATION AND CONCLUSION.

608. It may be well here very briefly to recapitulate in a general way the results we have arrived at on the various points which we have had under consideration, and the recommendations which we have made.

Summary recapitulation of conclusions and recommendations.

We recommend a revision of the existing law, as wanting in clearness and precision on the most vital points and as omitting to vest the necessary powers of investigation in the police.

We conclude that the number of registered holders of pans has somewhat diminished since the time of Mr. Plowden's report, while the average output of salt per registered holder has considerably increased; but we would not be supposed to believe that the registered holdings represent all interests in salt-pans.

We recommend that the possibility of still further reducing the number of works should be considered, and we name certain works which, in our judgment, are *prima facie* superfluous.

We think that on the whole the brine-supply is sufficient in quantity and strength and satisfactory in respect to purity. There are, however, exceptions under each head.

The mechanism of supply is primitive, and in some cases probably wasteful.

No very certain conclusions can be come to as to whether the size of a set of pans has been diminishing within the last 20 years. The same may be said as to the proportion of surface allotted to concentration previous to final precipitation. Such figures as are forthcoming tend to shew that no material change has occurred in either respect.

Three radical errors appear to us to run through all types of manufacture in Madras:—(1) the brine is admitted to the crystallising beds at too low a density; (2) the irrigations are too shallow; and (3) there is no arrangement for the elimination of the fluid left after precipitation of sodium chloride. There is some evidence to shew that the second defect has become aggravated in the course of the last twenty years.

The season of manufacture varies in different districts according to the distribution of the rain-fall. Agricultural exigencies have also some influence, and in individual years the dittam system, under which the Collector fixes the amount of salt to be made at each station, affects the period of manufacture at some works. This effect is most apparent in retarding the commencement of the work. In respect to the cessation of manufacture when the quantum is made up, we think that the system is not strictly worked.

There are other disadvantages in the dittam system, as for instance the power of limiting the production of an individual set of pans entrusted practically to the Superintendent of a division.

The present practice as to rejection of salt vests subordinate officers with dangerous powers. An improvement in cleanness of salt has been attained by the rejection of late years of considerable quantities of salt.

We consider that the delay in storing salt under present arrangements is greater than it ought to be, and recommend that orders should be issued for its abridgement. A few days' dryage on the ridges would, in our opinion, suffice. Allowing for the admitted delay in beginning storage, the storage when once begun does not seem to lag behind production.

The loss which by wastage falls upon the ryot we believe to be considerable, especially at the Ennore pans and at Vedaranyam, where the salt is carried by canal to the Government storing-grounds. The estimates of the amount vary immensely, but shew in the aggregate 8·6 per cent. They can hardly be relied on, but we believe that they are within the truth.

We consider the weighing machines in use, especially the platform machines, not as accurate as is desirable, and recommend that they should be superseded by beam-scales with moveable tripods. The arrangements for testing scales and weights are not satisfactory. We think standard weights should be everywhere supplied and rules laid down for systematic testing of scales and weights.

We suggest that rules should be laid down regulating the order in which the salt of different owners shall be received into store.

With some exceptions, kudivaram appears to be punctually paid, but the statements obtained are not quite conclusive. There is no rule making it the duty of superior officers to ascertain that the payments actually reach the manufacturers.

The proportion of heaps re-weighed by Deputy Collectors and Collectors has been quite insufficient to secure any real test of the quantities weighed in. Instead of 1·55 per cent. which the statistics of the past shew, we think that no less proportion than 15 or 20 per cent. should be tested.

We have analysed the statements of wastage and separated that due to ordinary causes from special wastage arising from cyclones, fire, or other extraordinary causes. The results are, however, vitiated by over-storage, which we believe to exist, though to what extent it is impossible to say. Still we think that an improvement in the way of more accurate storage has taken place of late years.

We recommend that except in small deliveries, say, not exceeding 2 maunds, all persons buying salt should be obliged to bag it before weighment.

We strongly recommend that all discounts, ordinary or special, should be done away with, and all salt weighed before sale. When the special discount is so large that salt is sold for less than the net duty, the arrangement obviously involves a sacrifice of revenue. It would pay better to destroy the salt.

We see no special objection to the continuance of the system of purchase on credit, except that the length of credit may cause some inconvenience and derange the finance accounts.

We consider the present arrangements for the export of salt extremely lax. An examination of shipments from Tuticorin to Travancore especially shews this. We suggest that prepayment of duty, or deposit of substantial security, should be compulsory on all salt shipped for British Indian ports, or for any Travancore or Cochin port. Prepayment would be the only effectual means of securing the revenue in case of salt shipped to other ports. But if a strict check on quantities landed could be enforced, arrangements for deposit and refund might be made. We recommend that no wastage allowance should, in any case, be given.

We consider the accounts or records of the salt department, though drawn up on right principles, to stand in need of simplification and revision with

reference to the existing state of things. They should be kept in bound books, with paging properly attested. The returns submitted to the Board are purely fiscal and give no means of judging of the executive working of the system.

We strongly urge the abandonment of the Fashi year and the adoption of the official year in all salt transactions.

We are decidedly of opinion that to secure an effective control and a proper uniformity of system, Collectors should be relieved of the charge of the salt revenue, and a separate head of department appointed; the officers under him being made to constitute a separate branch of the public service, and being selected with a view to ensure a class of men thoroughly trustworthy, of sound physique, and of a character fitted to command respect and enforce discipline.

The existing establishments are, in our opinion, too weak and underpaid. Some of the measures we have recommended will, if adopted, of themselves necessitate a strengthening of establishments.

We believe that the scale of police guards over the salt-pans stands in need of thorough revision and, on the whole, considerable strengthening. On the drying-grounds also salt is exposed to danger of theft; and in the case of salt carried from the Chingleput and Vedaranyam pans to the places where it is respectively stored, we think that the risk to the revenue is very great, and that present arrangements call for serious consideration. We recommend that Vedaranyam salt should be stored and sold at Vedaranyam, and that in Chingleput, unless arrangements can be made for the trustworthy weighment of salt at the pans and its protection *en route* to the depôts, it should also be stored locally. Even the platform guards are in places too weak.

The arrangements for the prevention of illicit manufacture and collection are reviewed by us. We doubt the sufficiency of the force at present maintained. In the Pudukottai State, in Trichinopoly and in parts of South Arcot and Madura the danger to the revenue from earth-salt appears considerable, and we suggest some arrangement with the Raja for suppression of the manufacture in Pudukottai, and special preventive measures with the same object in British territory. The force kept up at Vedaranyam for guarding the salt swamp there we consider quite inadequate. In our report on the West Coast we have already recommended decided measures for the prevention of illicit manufacture in Malabar and South Canara.

The danger from saltpetre manufacture does not appear to be very great, but we think the Act of 1861 might with advantage be extended to Madras, and that in the Ceded Districts the working of that Act might be entrusted to the special establishment which we recommend for the suppression of earth-salt manufacture there.

We are of opinion that all police employed in salt duties, protective or preventive, should not form a part of the district police, but should be a separate branch of the salt revenue service, under the control of the head of the department.

On the subject of the earth-salt manufacture of the Ceded Districts, we conclude that the measures ordered in 1873 have not, as carried out, had the effect of diminishing the out-turn, and that it is impossible to work the licensing system, which has in fact, in Kurnool at any rate, become an excise. We are decidedly of opinion that even now suppression is the wisest course, and that the money expended in organising a special preventive service on the model of the internal branch of the Inland Customs Department in northern India and in paying the compensation to which it may be held that Government is committed, would be well laid out. If the suppression in British territory be carried out, we suggest that negotiations should be entered into for simultaneous suppression in the Nizam's territory, the Jaghire of Banganapalli and Mysore.

With respect to the arrangements for the supply of salt to the French settlements in India, we conclude that at Mahé and Pondicherry there is reason to

suspect that a portion of the salt sold to the French is consumed by British subjects. At Pondicherry the two territories are so intermixed that we doubt if any arrangement short of an interchange of territory will meet the difficulty as regards villages within the outer cordon, though we think the fact that the quantity supplied far exceeds any probable consumption by French subjects might properly, if opportunity offered, be brought to the notice of the French authorities. The prevention of salt smuggling beyond the outer cordon should be considered as part of the land customs preventive scheme generally. At Karikal and Yanam there is no reason to suspect smuggling and at Mahé the possible loss to the revenue is trivial.

The rate of consumption of salt in Travancore leads us to suggest a more thorough enquiry than has yet been made, as to whether the salt sold in that state is all consumed there, and if not, where the balance goes to. Should it be found that any passes into British territory, we think that both the terms of the convention and the sacrifice made by the British Government under it would warrant the urging of a claim that the Travancore Government should take steps to prevent the exportation of its salt, to the damage of British Indian revenue.

In regard to the composition and quality of the salt as sold from the Government stores, we find that the specimens analysed vary much; some salts may be called fair, others are bad. But, taking the East Coast salt on the average, we find that it contains very nearly 85 per cent. of chloride of sodium and is inferior in that respect to the specimen of Bombay salt obtained from Ghorebundur, and very markedly to Liverpool or Punjab salt. The average of moisture is 9.281 per cent., an excessive proportion, detracting much from the commercial value of the salt. The defect is connected with the excess of chloride of magnesium (2.233 per cent.) which is also, by reason of the deliquescence of that substance, a marked drawback from the commercial value of Madras East Coast salt. The other chemical impurities amount to less than 2 per cent., and are objectionable as displacing chloride of sodium, but we believe are not noxious in the quantities in which they occur. The same may be said of the insoluble inorganic matter and probably of the organic matter present, but as to the last we have no certain evidence. The small size and want of cohesion of the crystals are grave drawbacks from the commercial value of the salt. In composition the average Madras salt does not differ much from the average of the 3 specimens analysed of Bombay salt imported for the West Coast monopoly, but in point of hardness the former is manifestly inferior.

We think that, though Madras salt is open to the objections specified, the picture of its defects drawn by Mr. Falk is much overcharged. The percentage of total impurity is in no single specimen analysed so great as stated by him, while the average Ennore salt, to which his strictures seem mainly to relate, contains less than half the amount of impurities alleged. We do not consider it in any way proved that salt contains organic matter of a kind or in a quantity or condition likely to make it a means of propagating disease.

We have instituted a comparison of the specimens according to the source of brine supply, which tends to shew that salt made from pit brine or partly from sea-water and partly from pit brine contains most chloride of magnesium. But we do not wish to lay stress on this or any other results deduced from the comparison in this particular respect.

The analyses of samples of Madras-made sea-salt as sold retail in district markets shew on an average a little over 84 per cent. of chloride of sodium, a proportion not far below that yielded by the average of the complete analyses of platform salt. No very definite conclusions can be drawn as to dryage between the platform and the bazaar. Insoluble impurities, both organic and inorganic, show a slight increase in bazaar specimens.

The analyses do not, in our opinion, evidence intentional adulteration of salt by traders. Nor do the reports of Collectors contradict this view. On the whole, we think that, except perhaps in the Ceded Districts where mixture with earth-

salt is more common, wilful adulteration of monopoly salt does not prevail to any great extent.

The practice of dissolution and re-evaporation does not prevail to a degree which indicates any general discontent with the quality of the salt now supplied, nor can we say that there are any general complaints on the subject, though particular salts are locally objected to. But we think that facts which have come to our knowledge shew that consumers discriminate between different kinds of salt and that the better kinds fetch higher prices and are preferred. In some cases, however, unfounded prejudices make themselves felt, as in that of the excellent spontaneous salt of Vedaranyam.

We have submitted detailed statements shewing the cost of salt during the 10 years ending 1874-5. The detailed results need not be recapitulated here. The total cost on the 10 years' average is set down by us at 3 annas 5-6 pies on the East Coast, 8 annas 9-7 pies on the West Coast, and 4 annas 1-7 pies for the whole Presidency. A correction may possibly be needed for pensionary charges of establishments. This would raise the cost of East Coast salt to 3 annas 6-1 pies. The cost varies much from district to district, and we have briefly pointed out the causes of the variation.

We have endeavoured to separate the items of cost as calculated which correspond to what would be charges falling direct on manufacturers under a system of excise, and find them to amount on the average of the East Coast to 1 anna 10-9 pies. The remainder of the cost consists of the revenue charges.

Besides the items making up the cost of salt there are certain losses or disbursements properly chargeable against the salt revenue in any general review of the net fiscal results of the tax. These are, loss by export arrangements, loss by the discount system, certain compensations and allowances, payments to the French Government and payments connected with salt made to the Governments of Travancore and Cochin under the convention of 1865. The summary of all items shews for the East Coast the following charges per maund of salt:—

Cost of salt including establishment and pensionary liability	A.	P.
Loss on export system	3	6-1
„ „ discount „	0	1-3
Compensation, &c.....	0	2-4
French subventions.....	0	0-5
Chargeable under convention with Travancore and Cochin.....	1	0-8
	0	1-5
Total...	5	0-6

Under the head of land assessment we have only entered what would be assessable on the cultivable portion of the area occupied by salt-works, if the land were cultivated. In this connexion we have endeavoured to answer the 6th question of the Government Resolution, viz., the value for other purposes than salt manufacture of the land now occupied by salt works. We are of opinion that, though it would be going too far to say that all lands so occupied are uncultivable, and though the returns may shew a less area to be cultivable than is really the case, yet in the present relation of demand and supply of land for purposes of agriculture, and in the existing condition as regards pressure of population on the soil, the lands used in the production of salt are not such as to command any value and that the statements of Mr. Falk on the subject are much exaggerated.

As to whether the present cost of producing salt is excessive, we think that, so far as administrative management is concerned, this is certainly not the case. In fact both establishments and guards are too weak. Some economy would, however, result from closing the smaller works. In respect of the payment to manufacturers and, at some places, the outlay on works, we think there is some extravagance.

We have shewn not only the average cost of East Coast salt for 10 years, but that for 5 years and approximately for the single year 1874-5. The increase is mainly due to short manufacture.

Our conclusion on the subject of consumption is that, taking the population as given by the last census and estimating the amount consumed on the average of 5 years' sales, the quantity of licit sea-salt used yearly within the limits of the Madras Presidency, Mysore and Coorg may be put down at 11-38 lbs. per head. We think that there are no sufficiently trustworthy data to enable us to calculate and exclude the separate consumption of Mysore and Coorg. The use of earth-salt in the Ceded Districts and Mysore and of the questionable salt of the West Coast in Malabar and South Canara (and probably in other districts too) considerably raises the rate of consumption elsewhere. If we exclude the 3 millions believed to eat nothing but earth-salt in the Ceded Districts, the rate rises to 12-38 lbs. per head of the remainder of the population.

There are no thoroughly accurate data for estimating the consumption in particular tracts; but we think there is reason to believe that the consumption of an area made up of the Tinnevely and Madura districts and certain portions of Coimbatore, Pudukottai and Trichinopoly reaches the rate of 1-4 lbs. per head.

We have worked out the retail prices at a number of stations and given an abstract of them by districts. We have then endeavoured to calculate the actual cost of carriage and thus to estimate the traders' profit. The latter item comes out remarkably low, on an average 3 annas 10 pies per maund.

We have discussed these results and are of opinion that, while it is probable that the retail prices on which the calculation is based are somewhat less than those actually prevailing, there are many circumstances which would make it reasonable to expect a low selling price, and that the results are not very wide of the truth.

We have analysed at some length the railway traffic in salt. Data of the quantitative distribution of salt by other means of carriage are wanting, but we have attempted a general sketch of the directions of salt trade. Our conclusion is that the general direction of traffic is determined by the cheapness of the salt, and that the trade is very sensitive to changes affecting cost whether in respect of carriage or first price.

We are of opinion that if the substitution of an excise for the present monopoly be determined upon, the change must be gradual. Competition among the manufacturers is essential to the success of an excise. We do not anticipate that the poverty of manufacturers will prove a formidable obstacle. The disposal of existing salt works is a practical difficulty. Works for storage and revenue purposes should, we think, be kept under Government control, while works of manufacture might be made over to the manufacturers, the interest on the cost of existing works being recovered. The charges on these accounts, as well as those for the cost of supervision and prevention can, in our opinion, only be recovered by a cess in some form, not by the levy from manufacturers of the actual amounts expended, according as they are spent. We do not think an acreage charge on salt-works a desirable way of recovering these amounts. The cess must, we think, as a rule, be calculated on the average of a district. As long as monopoly works continue to exist side by side with works under excise an adjustment of the monopoly price according to the cess levied at excise works would be necessary. We think that the cess had better not be incorporated with the excise duty. We are of opinion that no charge should be made in the way of land revenue for lands now occupied by salt works. Compensation in some special cases may be necessary. If excise be introduced, Government stocks should, when the new system has established itself, be sold in small quantities at a time, for such price as they will fetch in excess of the duty. The stocks should be made as large as possible before the change is begun.

As to the probable effects of the change on the cost of salt to the consumer, we think that there are grounds for expecting a decrease of 6 pies per maund.

in first-hand selling price, that there is some danger of a part of this reduction being intercepted by new intermediaries, and that the average cost of carriage will form a slightly larger item as the average distance the salt has to be carried will, if the works are reduced in number, tend *pro tanto* to increase, but that any disadvantages under these heads are likely at least to be compensated by the improvement in quality, which, we think, will be marked under excise. We do not believe that there is any danger of a permanent shortness of supply.

We are of opinion that the change is not likely to affect the revenue injuriously. We are not unanimous as to the places where excise should first be introduced; indeed one member, Mr. Venkaswami Rao, dissents altogether on the question of excise. The majority who recommend excise are agreed that the change can only safely be made if its introduction is entrusted to a special officer who shall devote his whole time and energies to the work.

The excise law will probably, we think, require some amendment.

In regard to Pooree sun-evaporated salt, our conclusion is that at present rates of duty it cannot hope to compete with Ganjam salt in any market.

609. We are indebted to the courtesy of Major C. C. Sargeant, Assistant Superintendent of Revenue Survey in charge of the Central Office, for the maps which accompany the report.

Maps.

610. The edition of Mr. Plowden's report to which we have referred is, that printed at the *Calcutta Gazette* office and bearing date 1856.

Edition of Mr. Plowden's report referred to.

611. While signing the report, the President and Mr. T. Venkaswami Rao do not concur in all the conclusions therein stated, and have, therefore, recorded separate minutes of dissent, which will be attached to the report. Although acquainted generally with the points on which the President dissents and with the grounds of his dissent, the majority signing the report without reservation have not had the advantage of seeing his minute before the report passed through the press.

Dissent.

C. PRITCHARD, *President*.

J. GEOGHEGAN,

H. E. STOKES,

R. M. ADAM,

T. VENKASWAMI,

} *Members*.

MADRAS,
11th September, 1876.

Minute of Dissent by Mr. Venkasami Row.

I think the main points to be considered in deciding upon the relative merits of the monopoly and excise are:—

- (1) The security against smuggling and fraud,
- (2) The degree of interference with production or trade involved, and
- (3) The degree to which the quality of the commodity and its cost to the consumer are affected. This includes, of course, the cost of collection and the resulting surcharge to the consumer.

2. The first point depends upon the relative efficacy, as a safeguard against the fraudulent removal of salt from the stores, of the systems of stock account and preventive stations, which constitute the distinctive features of the two modes of levying a revenue on salt. Theft from recognized works before the salt is brought to store, as likewise illicit manufacture, are matters dependent solely upon guarding arrangements, which are altogether irrespective of the form of taxation and are consequently irrelevant to the discussion of the relative merits of the monopoly and excise. I would confine myself therefore to a consideration of these distinctive features of the two systems, first premising, that in rating the abstract worth of either, we must dismiss from consideration all those defects due to administrative shortcomings, which might occur under any system of check.

3. I think there can be little doubt that an accurate stock account is inconsistent with a system of excise, while preventive stations are a superfluity under a monopoly. An essential condition of the former is the actual weighment of salt into store, and it is hardly possible that the requisite establishments can be provided to watch and superintend the weighment as each heap of any size is laid by each manufacturer or group of manufacturers. The licensed manufacturer must necessarily have a latitude as to opening and selling from his heaps, and a test weighment by a superior officer subsequent to storage is, therefore, out of the question. In Madras, I may observe *en passant*, with the infinitely larger number of registered pan-holders, the difficulty of maintaining a separate running account of storage, based on an accurate weighment, for each licensed manufacturer or group of manufacturers must be a great deal enhanced, and I do not suppose, that the system of grouping can be carried out to any material extent, without hampering the manufacturers. Mr. Pedder, in his report on the internal management of the Southern and Presidency divisions of Bombay, says:—"We cannot store salt indiscriminately, because, as I have explained above, each manufacturer receives his share of the price of salt he has made when it is sold. We cannot have heaps of uniform size, because one manufacturer makes 100 maunds and another 1,000. And we cannot insist that one heap shall be entirely sold before another is opened, because with a system of free excise the owners and purchasers of salt settle among themselves by bargain what salt shall be sold and its price."

4. As to the abstract merits of the two systems, *i. e.*, stock account with tested weighments and preventive stations with check weighments; I think it is sufficient to refer to one essential point of difference between the two. A preventive officer has nothing but his own conscience to restrain him from passing excess salt for a consideration; for, when once the salt is off the preventive station, there is no way of discovering the overissue; whereas the officer who is responsible for

storage has to account for deficiencies, and over-storage in heaps which remain unsold can be brought home to him at any moment.

5. Under the Madras system of storage, salt is stored in heaps in regular rows; the heaps are numbered in the order in which they are stored, and the opening or sale of a heap otherwise than in the order of storage is strictly prohibited. The slightest deviation from this rule can be found out at a glance, and if the Deputy Collector himself does not find it out, it will be brought to his notice by one of those anonymous and pseudonymous petitions which are daily pouring in into his office. Thus then, the officer in charge of the stores cannot dispose of at once a heap in which he has put excess salt; he must wait until it comes to be opened in the order of storage; but in the meantime, it may be hit upon for test, or the superintendent may be transferred to another place and thus not only fail to realize anything from his over-storage, but may have to account for it whenever it is discovered.

6. It is true, that the test weighments are not conducted to anything like the extent they ought to be; but it is not the fault of the system under consideration; it is a mere shortcoming in the actual enforcement of it. The mere chance, nevertheless, of the Deputy Collector coming in and testing any heap or heaps at random, must have a restraining influence on those not desperately corrupt. A private owner of a salt-work or purchaser of salt need care only to avoid direct proof of fraud; but the case is something different with a Government servant, who has a position to maintain and, as a rule, a higher one in his own sphere to look to; any well-grounded suspicion, which his superiors may be led to entertain in regard to his conduct, must affect his position and blast his prospects. Neither is the position of a preventive officer precisely the same as that of the officer responsible for storage; there can, in the nature of the case, be hardly any tangible ground for suspicion; reports, if there be any, of his passing excess salt for a consideration would be treated, as all such reports must necessarily be, as idle rumours.

7. So far, therefore, it seems to me, that the system of stock account, which is the key of the monopoly and incompatible with excise, gives the former a decided advantage over the latter as the means of levying a tax on salt. I shall reserve for another place my remarks on the practical results of its working on the public revenue, and shall proceed to consider the second point set forth in my opening para., i. e., the degree of interference with production or trade involved.

8. I do not suppose, that it is sought to maintain, that practically, a system of excise, such as is proposed to be substituted for the present monopoly, is consistent with the true principles of free trade. Of free trade there can be very little, where, to begin with, the selection of the place of production requires the approval of the officers of Government; the produce has to be brought to, and stored at, a particular place and in a particular manner under close watch and there sold upon payment to Government of a sum about twenty times as much as the seller is to get. I admit, that the manufacturer has a choice as to whether the article he turns out shall be good or bad, and also as to varying the one-twentieth part of the actual price to the first buyer; but the practical question, as respects the value of free trade is, whether this choice is likely to be exercised to the benefit of the consumer, and this leads to a consideration of the third point, i. e., the degree to which the quality of the commodity and its cost to the consumer will be affected.

9. The majority of the Commission advocate the excise chiefly on the ground, that it will have a beneficial effect in both these respects; their anticipations being based on the general theory, that the manufacturer obtaining a price for his commodity in the open market, according to its quality, will have an incentive to produce a better article; while competition will bring down the price to the lowest level compatible with a reasonable profit to the producer.

10. First as to quality; having regard to the actual wants and habits of the population, it is to be considered whether, exercising his own choice in respect of it,

the manufacturer will not, on the contrary, find it more profitable to turn out an inferior article. It is to be remembered, that under the present system, the officers of Government have, or at any rate exercise more or less, the power of rejecting bad salt, and I presume it is admitted on all hands, that on the whole a fair and wholesome commodity is served to the general consumer. Indeed, so far as I am aware, there is nothing on the records of Government to shew, that complaints have been ever made by the consumers with regard to the quality of the monopoly salt, and I do not know that the enquiries instituted by this Commission have elicited anything deserving of notice to the contrary.

11. To show, however, that people would appreciate better qualities, the majority of the Commission in their report enumerate a number of instances as indicating a discrimination on their part and their willingness to pay higher prices for better descriptions. I shall analyse these instances, so far as the available data would admit, and endeavour to show how far they make out such a discrimination as would influence the manufacture under excise. It is in the first place to be observed, that the question is not whether the people would reject a superior description of salt, when the difference in cost is considerably outweighed by the difference in quality; but whether, taking the prices to be fairly proportioned to quality, the lowest classes, which constitute the bulk of the population, would pay a higher price for a better quality.

12. The instance I would take first is that of the Cheyur salt, which is carried into North Arcot and there finds sale notwithstanding the presence of rail-borne salt from Madras, which must be much cheaper. Now, from the returns of sales of salt I find, that the total annual sales at Cheyur during the ten Fasy years ending 1874-75, were as follows:—

Fasy		(Year)	Maunds.
1275	.....	(1865-66)	55,899
1276	.....	(1866-67)	32,065
1277	.....	(1867-68)	40,966
1278	.....	(1868-69)	65,901
1279	.....	(1869-70)	50,594
1280	.....	(1870-71)	88,198
1281	.....	(1871-72)	57,890
1282	.....	(1872-73)	46,295
1283	.....	(1873-74)	85,628
1284	.....	(1874-75)	1,33,989
Average.....			65,742

What must have been the proportion hereof which, after supplying the adjoining tracts of Chingleput and South Arcot, ordinarily dependent upon this station, passed into North Arcot? The population of the district of North Arcot is 2,015,278 which, at 12 lbs. per head, (now considered to be about the ordinary rate of consumption, though it falls short of my own estimate) would require about 300,000 maunds; and taking one-fifth of the total sales of Cheyur (probably a too high proportion) to pass into North Arcot, this, on average of the ten years above specified, would come to about 1 per cent. of the requirements of that district. What does this show as to preference being given to better quality by the masses about which alone we are concerned? It is curious to note, that the Cheyur salt, preferred as it is on account of its superior quality by four per cent. of the population of North Arcot, does not go beyond a certain distance in the district in which it is made.

13. The next instance is that of the Merkanum salt in South Arcot, which goes by carts into parts of Salem abutting the railway and to Salem itself, and there commands a price 10 and 12 annas a maund higher than the rail-borne salt from Madras. Merkanum is a place of production, which supplies a large area, and it is not possible, therefore, to estimate even roughly, the portion which passes into

the Salem district. There are, however, two things to be remembered in reference to the preference given to this salt in Salem. Firstly, before this district was connected by rail with Madras, it was dependent chiefly on Merkanum and other salt stations in the adjoining district of South Arcot, and irrespective, therefore, of the undeniably superior quality of the Merkanum salt, the people of Salem had by long habit contracted a liking for it which they would not easily give up. Secondly, there is evidently between Salem and South Arcot, as I know there is between Salem and Tanjore, a regular traffic in agricultural and other produce; Salem being the source whence the other two districts draw their supplies of dry grains, tamarind, lamp oil and ghee to a considerable extent, and the carts that bring these commodities return with loads of salt not only from Merkanum but other stations in South Arcot. The Collector of Salem reports:—"Carts frequently go to Pondicherry, Cuddalore, Tindivanam and other places thereabout, being hired either by travellers or for merchandise. On arriving at their destinations, the cart-owners for the most part proceed direct to the salt pans and return with a cart-load of salt, which they sell to merchants in Salem realizing a good profit. No one goes to the South Arcot pans for the sole purpose of bringing the salt, but use is made of the return journeys for procuring it. The majority of the people buy the Madras salt as being cheaper, although there is a general impression that it is productive of cutaneous diseases. There is no doubt, that every one would prefer a better description of salt than that now available, provided it could be had for the same price. Madras salt is the salt in general use throughout the district." It is strange indeed, that while the Merkanum salt thus competes at a much higher price with the Madras salt in Salem; according to the report of the Collector of South Arcot, the people of Cuddalore, his head-quarter station, "with true Indian conservatism," prefer to it Gundalam salt, than which worse sea-salt is, I believe, not known in the Madras Presidency.

14. As to preference being given to the Védarannyam manufactured salt, while that and the locally manufactured salt were being sold at the Negapatam dépôt at the same price; the preference means nothing. The merchants buy from the Government dépôts by weight and sell by measure. Now, it is notorious, that the Védarannyam manufactured salt is much heavier than the Negapatam salt, and it is on this account that those who buy by measure pay more for the former; in fact they pay Rs. 250 for one garce of Negapatam salt, and Rs. 260 for a great deal more of the Védarannyam manufactured salt.

15. As to Adrampatnam salt competing with the Negapatam salt at Trichinopoly; I know it as a fact that the former, as likewise the salt of Kattumavadi, Aiyapatnam (now closed) and Arasanagari, further to the south in Tanjore has, from the earliest known date, commanded the Trichinopoly market, owing obviously to those stations having, before the opening of the South Indian Railway, been the nearest sources of supply thereto; and superior as the quality of the salt doubtless is, I have little doubt, that habit has something to say to the preference there given to it.

16. I do not know what are the prices quoted respectively for the Tinnevely and Negapatam salts at Dindigul. The latter, I think, had not taken deep root at the Dindigul market, and so, when a better article became available at, perhaps, a trifle over the price of the Negapatam salt, the latter was driven out of the market.

17. The choice shewn by the people of Malabar exclusively for the Bombay salt seems to me to be due in a great measure to the exceptional situation of the districts on that coast. They have, from the earliest known days, been wedded to the Bombay salt; in fact, until last year, East Coast salt had, so far as I know, never been put side by side with the Bombay salt in the Malabar market. Hence perhaps the unaccountable phenomenon that, when Tuticorin salt, with 94% of sodium chloride and 47% of magnesium chloride, was introduced last year for the first time, it found so little favor against the Bombay salt, with its average of a little

less than 86 and 2.77 per cent. respectively; possibly the prejudice against this unwelcome intruder from Tuticorin is due to underhand influence brought into play in the interest of the long established trade with Bombay.

18. As regards the fact that different prices are quoted for the East and West Coast salts in Coimbatore, it seems to me, that it proves nothing to the point, unless it be shown that the East Coast salt is rejected at a lower price. Such, however, is far from being the case. On the other hand, I find, that, at a time when there was no restriction on the sale of Bombay salt on the West Coast, and when that and the Madras salt were starting at equal prices from Beypore and Madras, the two termini of the Railway, the former as a rule encountered, and was driven back by, the latter at a point about 300 miles from Madras and a little over 100 miles from Beypore. There was probably a difference of 4 or 5 pies per mile per ton in the Railway fare for salt for a part of the distance of 100 miles from Beypore; but obviously this would not have exceeded the large difference in the cost of carriage due to a difference of about 200 miles in distance, and even if it would have, all that is made out is, that Madras salt was preferred by reason of its having been slightly cheaper. This is exactly what proves that the people at large care more for cheapness than for quality. The district of Coimbatore, with the exception of a small portion contiguous to Carcor, is situated within a much shorter distance by rail from Beypore on the West Coast than from either Madras or Negapatam on the East Coast, and yet a statement furnished by the Collector of Coimbatore shows, that out of a total population of 1,760,346 inhabitants, 1,630,523, or more than nine-tenths usually eat East Coast salt, and that the remaining portion uses both East Coast and West Coast salts.

19. I am not acquainted with the circumstances, under which Nowpada salt is sold in places nearer Ichapur and Ganjam; but I would venture to hazard a remark, that a sifting enquiry into those circumstances would probably show, that difference of quality has not much to say to the phenomenon.

20. The conclusion on the whole, to which all the evidence adduced tends, is, that one thing the general consumer cares for is the cheapness of the commodity; while predilections due to established habit have, at the same time doubtless something to say to his choice.

21. It is true, that the difference in the whole price due to difference in quality must always be relatively a small one; but I doubt whether the manufacturer would be able to secure this small difference in his sales for the general consumer. We see to what extent the offer of salt at 6 annas a maund for curing fish is availed of; surely, the fishermen would rush in for it, if they could get for well-cured fish prices which would cover the cost of salt at this low rate and leave them the smallest profit over and above what they get now by selling imperfectly cured and unwholesome fish. It is argued, that the fishermen have so many facilities for obtaining salt by illicit means, that they do not care for licit salt; but this argument is not tenable, inasmuch as the fish are not well cured—a fact which shows, that either untaxed salt is not available, or that the consumers will not pay a trifle more for properly cured fish. All experience shows, that, in this country, the producer will try to turn out his commodity at the lowest possible cost, and the consumer will try to procure it at the cheapest possible rate, both alike with no particular regard for quality. Let us take the analogous case of country spirits, which the Government have been at so much pains, but with so little success, to secure to the public in a genuine and unadulterated form, and let us see also what sort of stuff is being served to and readily taken by the people under the name of cheap country beer. A slight acquaintance with native bazaars must, I think, suffice to show, that it is only inferior and cheap goods that sell largely.

22. I think it is generally admitted, that good salt takes longer to form and costs more in production than bad salt. Madras salt has within the last four years been made the subject of severe strictures; but, so far as I understand them, the

strictures do not amount to a condemnation of it as unwholesome; they refer only to its commercial value. Its general defect is considered, I believe, to be an unduly large proportion of water and of magnesium chloride, which latter, by rendering the salt deliquescent, tends to increase its moisture; the result being large wastage. This defect, in his letter printed as No. 5 in Appendix E, Dr. Ratton attributes to two causes, *i. e.*, the ignorance and conservativeness of the salt ryots and their eagerness to scrape up as much and as quickly as they can, which they do generally by too shallow irrigations and the employment of "weak and muddy brine permitted to evaporate to too high a degree of density and allowed to mingle with strong magnesian mother liquors which force sodic chloride rapidly." The plan which this officer recommends for remedying both the evils is, that Government should undertake the manufacture directly by its own officers, who should possess a competent knowledge of salt culture. Failing this sure remedy, he would put the manufacture under excise; under the operation of this system, Dr. Ratton anticipates, that the existing numerous holdings of the salt ryots will be absorbed into large undertakings by capitalists, who would put two or three lakhs into such manufacture; in fact he has been asked "to undertake the management of a Limited Liability Company to be got up for that purpose."

23. The majority of the Commission, however, do not accept, in its entirety, Dr. Ratton's view as to the probable effect of his alternative remedy, but look mainly to the operation of free trade and competition amongst the manufacturers for an improvement in the quality of the salt; apparently attaching very little weight to the obstacle, which the ignorance and conservativeness of the ryots, whom Dr. Ratton describes as a very ignorant and abject class of natives, present. In fact, the anticipations of the Commission rest solely on the assumption, that the consumers are ready to pay prices proportioned to quality; but I think I have shewn above that this important link in the chain of the argument is hardly made out. Indeed, I am afraid, that, with an unmistakable tendency on the part of the general body of consumers to prefer cheapness to quality, the tendency on the part of the manufacturer to scrape up as much and as quickly as he can, would, under a system which lacks the present guarantee as to the enforcement of a minimum standard of quality, develop itself more fully under excise, and that the probable consequence therefore is, that salt of inferior quality will be thrown more largely into the market. It is to be remembered, that the manufacturer has to deal not with the consumers themselves but with traders, and so long as the trader has to buy by weight and sell by measure (this system must, I presume, continue for years to come), he would naturally care more for bulk than for quality. Indeed, I doubt whether the mass of consumers would care less for bulk.

24. As to the cost of salt to the consumer being lowered, it is first to be considered whether the difference between the price leviable under the monopoly and a duty of Rupee 1-13-0 per maund, would leave a margin for a reduction of the price to the consumer, and supposing that it would, whether a healthy competition in production would actually secure to him the full benefit of such margin. I say "leviable," because the present price is considered not to cover the whole cost to Government under the monopoly plus the duty, and will probably be increased even if the monopoly continues. The majority of the Commission consider, that there will be no material variation in the several component items which make up the difference, excepting the chief one of kudivaram or payment to the manufacturers, and anticipate a reduction to the extent of 6 pies per maund in the item last mentioned. This anticipation is based on the ground that the present rates of kudivaram are much too high, which, however, I doubt.

25. It is to be remembered, that the kudivaram does not represent the mere cost of labour, but includes, as a rule, the profit of a valuable and transferable property in land by whatever name it may be called; and leaving out of account the special benefits secured to mirasidars in certain cases by grants, express or implied, in the shape of favourable "varum," I do not suppose that the salt ryots' actual net

profit, at the present increased rates of kudivaram exceeds, on an average, the ordinary profits of agriculture on ryotwary tenure. There are, no doubt, instances in which it does; but there are others in which it falls short; and others again in which it is nil. In calculating the probable out-turn of a certain area and the manufacturer's net profit out of the contract price he receives from Government, it must be borne in mind what risks attend the probable out-turn. An unseasonable and heavy fall of rain destroys the crop as it is forming, and the same process has to be repeated from the first. It is not rarely, that the pans and the brine-wells and channels are wholly washed away by a cyclone, and it costs no small amount of labour to lay them out again. It is not unfrequently the case that advances to labourers are lost by their emigrating therewith or otherwise failing to work out their advances.

26. It is, I think, generally admitted, that the salt ryots as a body, are poor—a fact apparently incompatible with the assumption that they make an unduly high profit by the salt manufacture. There is no doubt that some wealthy individuals also hold salt pans; but they are not salt ryots alone; they are either large landed proprietors, or merchants or money-lenders. The fact that the ryots will not devote their labour to salt culture, when it is required for agriculture, shows, at any rate, that generally the salt culture is not regarded as particularly remunerative. I think the Commission is aware that there are pans absolutely unsaleable.

27. According to Statement No. 2 in Appendix C to the Report of this Commission, the total area occupied by the salt works on the East Coast of Madras is very nearly 26,000 acres, and deducting the area of works not open during the whole period of the ten years ending 1874-75, it comes to 25,374 acres. This probably includes the beds of supply channels and the sites of storage platforms; but I do not think this makes very much difference. The average out-turn then for the past 10 years, of the works open on the East Coast of Madras throughout this period, is 59,89,615 maunds, which gives just 236 maunds per acre. This average rate would be increased, if pans not worked, as also beds of channels and sites of platforms above alluded to, (supposing they are included in the area taken) were excluded; but it appears to me, that the item last mentioned which must constitute the greater portion of the difference should not be excluded. Pans not worked have certainly not been used otherwise, and as the object is to determine the ryots' average profit on their entire holdings, they ought obviously not to be taken into account in deducing the average. The average rate then of the kudivaram per maund calculated by distributing the total payments over the total out-turn, on the average of ten years, is 1 anna 4-9 pies,* of which, on a fair calculation, as will be shewn further on, of the cost of manufacture and delivery into store, the salt ryots' average net profit cannot at the outside exceed 6 pies a maund, or Rs. 3-12-0 per garce. This on the above calculation of the average out-turn gives Rs. 7-6-0 per acre, which, it does not appear to me, exceeds the ordinary profits of wet cultivation on ryotwary holdings. I understand, that in working a half cawny "Alum" near Madras, the bare wages of one single cooly, which it ordinarily requires for six months, come to Rs. 22. According to Mr. Bayley's calculations,† the average out-turn of an average half cawny "Alum" in Attipat is 3½ garce or 390 maunds, and the sum named gives 11 pies per maund. This is exclusive of repairs, the baling and other necessary implements, the heavier item of conveyance from the pans to the temporary platform and from the temporary platform to the boat, or transport to the Government depot at Madras, as well as the wages of a cooly to remain in charge of and watch the salt at the place last mentioned (10 miles from the pans) until it is weighed into store, which it is not often for months. The first mentioned item of 11 pies, as also more or less all the others, are generally applicable to salt works on the East Coast, and in several instances, the cost of covering or thatching the heaps, is also borne by the

* Rs. 5,31,535 ÷ 60,77,459 maunds = Rupee 0-1-4-9. This, however, will be reduced if the special rates of kudivaram paid at the southern works of Chingleput and at Marakkanam in South Arcot were excluded, as I think they ought to be.

† His Memorandum, para. 72.

ryots. I adduce these facts merely to show that 6 pies a maund is an outside estimate of the ryots' net profit.

28. The Commissioners' report seeks to deduce from returns, obtained from the districts, of salt-pans sublet, a conclusion that there is room for a considerable reduction in the rates of kudivaram; but these returns, I submit, are of very little value except as showing that the ryots' net profit out of the kudivaram, varies very considerably in the different districts; being just equal to the value of one cooly's labor, calculated at about 2 pies per maund in Vizagapatam, and as much as 8½ pies per maund in Kistna. These returns have not been compiled from any authentic materials on the records of Government (such being totally wanting), nor are they based on a detailed calculation of the component items of the cost of manufacture: indeed, they bear traces, in several instances, of having been filled up by mere guess. They are, further, not compiled on an uniform or consistent plan, and on the whole give no information such as can be relied upon. Such as they are, however, all that they show is that the maximum rates of rent are higher than the average I have deduced. These maximum rates, it is to be observed, are, in most cases, subject to a deduction for repairs and tools and implements.

29. Reference is made to the opinions expressed in the discussion of 1854 by one Collector* out of 13, and by one Member† of the Board of Revenue, that under excise the first-hand price would be reduced and the cost of production decreased, and much stress is laid upon the fact that, since that date, the rates of kudivaram have been raised about 50 per cent., while at the same time the ryots have been relieved from the up-keep of the larger brine supply and other works. I think it sufficient here merely to note, that, since 1854, wages of labour in this Presidency have become everywhere doubled, if not more; and I do not see how, under excise, the cost of production can remain unaffected by this cause. Much stress is laid also upon the fact that salt-pans are held by non-manufacturing classes to an extent, which varies from 06 in Ganjam to 90·08 in Tanjore; but what is the percentage, to the total number, of the ryotwary holders of agricultural lands who do not themselves work on the field? In citing the instance of Levingepuram and Sevāndakulam works recently opened, at which the occupancy right of crystallizing beds realized, on the average, four Rupees each, the Commissioners have apparently not considered what this exactly comes to. Taking both the works together, 14 crystallizing beds, with their condensers, &c., make one acre, of which the value, therefore, comes to only Rs. 59. This is about one-half the rate at which ordinarily good rice land held on ryotwary tenure sells in Tanjore, and, I presume, also in Tinnevely, to which district, the localities alluded to belong, and which in many respects bears an analogy to Tanjore. The Commissioners seem to regard the difference between the kudivaram paid to the salt ryots and the actual value of the labour spent on the production of salt as so much money lost to the exchequer; apparently forgetting that, so far at least as the salt ryots who are the representatives by inheritance or otherwise of those who held the pans at the date of Regulation I. of 1805 are concerned, there is little difference between the tenures on which they and the agricultural ryots hold their lands. If the Government carried on the settlements of land revenue in this spirit, surely we should find this country in a state very different from that of general and increasing prosperity in which I find it now. The fact is, that it is by the extinction of the present body of proprietary ryots, advocated with so much force by Dr. Ratton, that any material diminution in the cost of salt to the consumer, so far as it depends upon the cost of production, can be looked for; the operation of the excise system seems to be almost certain to bring about the result first mentioned; but it remains to be seen whether it would or would not bring about the one last mentioned.

30. As to competition bringing down the price, there must, I think, be a wide margin for men to compete with one another; but the existence of such, as I

* Chingleput.

† Mr. Goldingham.

have said, seems to be doubtful. It is admitted, that the salt ryots "clamorously" declare their profits at the existing rates of kudivaram to be insufficient, and yet it is by a curtailment of these profits that a reduction of price to the consumer is looked for. The ryots would naturally, it seems to me, try to increase their profits, and if they cannot do so or even maintain such profits as they get now, the probability is, that they will sell their pans to some wealthy speculator or firm of speculators, and that the result in the sequel would be, that the so-called system of free manufacture would degenerate into a private monopoly, which must necessarily preclude the chance of both improved quality and reduced price to the consumer. I do not think there is any prospect of a number of capitalists springing up and competing one with another, except perhaps at Madras and one or two more such large sources of supply. On the other hand, admitting that the present rates of kudivaram are liberal enough to secure a fair profit to the salt ryots under excise, without any enhancement and even with a reduction of price to the consumer; there is, I am afraid, the danger of the ryots, who, as a body, are men of very limited means, each working on a small scale, not being able to compete with a wealthy speculator carrying on the manufacture, by probably scientific methods, in their neighbourhood, and being thus induced to transfer their pans to him, making him eventually master of the situation. Obviously, the danger of a private monopoly is far greater in the case of small stations.

31. The Commissioners think, that under excise, the development of competition among the salt-workers would reduce the percentage of impurities in the composition of the salt, increasing that of sodium chloride *pro tanto*—a result equivalent to a reduction of the price to the consumer. All these anticipations rest on the assumption, that under excise the manufacturer will find it more to his interest to make good salt than to make bad salt. I have said enough on this point to show that there is little warrant for this assumption. It is here to be observed, that whether the manufacture is carried on by new capitalists or by the present body of salt ryots chiefly by paid labour or on sub-contract, as at present, the actual working agency must be much the same, and it is not to be expected that either the agents of capitalists or the non-working owners of salt works under excise will be able to enforce, any more than the officers of Government can, a due adherence to a proper or adequate standard of quality.

32. As regards the Bombay experience, which is chiefly relied upon in advocating a change to the excise system; admitting all the superiority claimed for the salt there made, with respect to both quality and cheapness of production; I do not suppose that it has been ascertained by scientific investigation, that the conditions affecting either are identical in both the Presidencies. I believe it is admitted, that salt made under excise on the Konkan works is not so good as that made under a Government monopoly on the "Runu" of Kutch, and this at any rate shows, that the quality of salt depends also on local and physical conditions. It is not shewn, that a system of Government monopoly once existed in the Konkan with bad salt as its consequence, and that a change to the excise brought about a reformation in its quality. On the other hand, I believe, the example of Orissa has shewn distinctly enough, that a reformation of quality does not necessarily follow a change from the monopoly to excise.

33. In the neighbourhood of Bombay, labour is apparently very cheap. It further appears, that salt is made there from the sea-water itself, with which the "Khajena" or main reservoir is filled at ordinary spring tides, and which flows by gravitation successively into "Tapownee" or smaller reservoir, and "Agur" or the pan in which salt is formed; in some cases the sea water flowing direct into the "Agur" itself. This, while it ensures the production of good salt presumably, must save labour in one important respect, the raising of the brine by lift from creeks, backwaters or wells, which is the process in vogue, and I believe unavoidable, in most of the salt works in this Presidency.

34. It is also probable, that on the Konkan works the process of crystallization is not disturbed, as it is on this coast, by strong land winds and heavy falls

of rain at irregular intervals during the manufacturing season. On this point, Dr. Rattron in his letter above quoted writes thus:—

"In the districts north of Madura, that is, in seven of the nine maritime or salt-producing districts, the climate is unfavourable to the manufacture of very well and solidly crystallized salt. The sea breeze, the long shore wind and the land wind, each in their turn, blew with such violence over the unsheltered salt swamps, that sheets of brine from three to twelve inches in depth are thrown into rapid wave motion to an extent which almost annihilates the force of crystallization. Deeper irrigations, even if conducive to crystal formation in this climate, which I very much doubt, have no great chance of evaporating to the point of yielding up the looked-for crop of salt, before being overwhelmed and washed away by the rains which fall here irregularly; and therefore more or less unexpectedly in February, March, April or May."

35. Another cause, to which the comparatively high cost of production in this Presidency is attributed, is the smallness of the holdings—an evil, for which nothing short of a radical change subversive of rights which have grown up in the course of nearly three-quarters of a century, would be an adequate remedy. On the Konkan works, of which the average yield for two years, *i. e.*, 1873-74 and 1874-75, amounts to 54,71,452 Indian maunds, the number of registered holdings is 2,972; the average per holding being 2,640 maunds. The salt pans on the East Coast of Madras producing, on the average of 10 years, 60,77,458 Indian maunds, are distributed among 7,736 registered holdings, and the average per holding is just 785 maunds. The fact that in the statement of holdings in the Konkan, Government is entered as sole holder of a number of pans worked by numerous sub-tenants, does not appear to me to modify the contrast much, inasmuch as there is a counterbalancing element in the calculation of the Madras figures, which do not include unregistered sub-divisions, of which there must be good many. Neither do I look upon it as a very hopeful sign that, in the case of 5* out of 78 stations of manufacture on the East Coast of Madras, and of which the average produce is 778,165 maunds or a little over one-eighth of the total out-turn, the average per holding rather exceeds that of two-thirds of the Konkan works, of which the average produce is 26,64,940 maunds or less than a half of the total.

36. On the whole, I am humbly of opinion, that the excise system holds out no advantage over the monopoly in respect of either quality or cost to the consumer—the two points, on which, as it seems to me, the majority of the Commission presume the superiority of excise on inadequate data.

37. The question to be next considered is the possible danger of a failure of supply. The present East Coast supply is drawn from 78 manufactories scattered over 1,050 miles of the coast line; and if the stock at any of those which contribute a large share to the total out-turn runs short, it would not be a very easy matter to replenish it. At any rate, it will increase the price very considerably; indeed, it seems to me, there is the risk of the prices running up without such contingency. Here again, the Commission relies on Bombay experience for a guarantee against a failure of supply, though at the same time it admits, that there the quantity in store at the beginning of the year is, on the average, only about a half year's supply, while in Madras the stock at the time of the year when there is least salt in store, averages a year's supply on the whole. It is not to be expected, that in Madras the manufacturers under excise will be able to maintain stocks to the extent they are on the Konkan works, which are all situated within 30 miles and command an abundance

* Divisions.	Average produce. Maunds.	No. of registered holdings.	Average per holding. Maunds.
Manganapudi	202,925	97	2,092
Merkanam	249,545	120	2,080
Tuticorin	88,225	43	2,051
Loringapuram	116,580	51	2,286
Arasadi	120,820	61	1,982
Total	778,165	372	2,092
† Ghorebunder	714,343	397	1,800
Uran	19,59,997	1,013	1,925
Total	26,64,940	1,410	1,890

of brine supply by direct flow from the sea. Already, under the Government monopoly, we have had warnings of a failure of supply in the Madras districts; under excise, looking to the smallness of the holdings and the inadequacy of the individual resources of the numerous body of manufacturers, the risk of such failure must be greater; at least there can be no guarantee against it until the consummation, aimed at by Dr. Rattron, *viz.*, the absorption of the existing holdings of the salt ryots into large undertakings by capitalists or Joint Stock Companies, is realized. It is well known to what extent the up-keep of tanks and other minor works of agriculture within the scope of "Kudimaramut" or customary village labour, have been neglected in this Presidency, since, on the transfer of the "Maramut" or Public Works Executive to a professional department about twenty years ago, the Revenue authorities ceased to enforce the contribution of such labour. It is needless to point out, that the timely and proper execution of the annual repairs to the larger brine supply works, protective embankments and the like, is essential to the manufacture of the requisite quantities of salt, and I look upon a combination and co-operation of the numerous body of the salt-ryots for this purpose as almost hopeless.

38. It is hardly necessary to point out, that where the Government realizes a revenue of upwards of thirteen millions of Rupees, by a tax on a necessary of life twenty times the cost of production, and where, moreover, it has undertaken for nearly three-quarters of a century, the obligation of ensuring its supply to the population, it is peculiarly incumbent on it to guard against a failure of the supply.

39. I shall now proceed to consider the actual effect of the working of the monopoly in Madras. I do not mean to say, that the storage accounts, as they are now kept, are strictly accurate or fairly so everywhere in the Presidency. On the other hand, I believe, that overstorage is resorted to here and there to some extent, partly no doubt from motives of illicit gain, but chiefly, I imagine, as an expedient to avoid wastage. Neither do I mean to deny, that the existing procedure is susceptible of considerable improvement; but with all deference, I am unable to agree with the majority of the Commission in the inference they draw from the insufficient and infrequent application of tests by Deputy Collectors and the irregular results exhibited by the storage and out-turn accounts, that overstorage must prevail generally.

40. It is true, that in one district, Madura, the test weighments were neglected a whole twelve-month; but in other districts they have been conducted every year to some extent, though undoubtedly very small, and have the results shewn the storage account to be absolutely inaccurate? In 1874, while I was in Tanjore, several heaps at several stations were tested by the Collector, the Honorable D. Arbuthnot, and some at Negapatam by the Sub-Collector, Mr. H. J. Stokes; but except in one instance, *i. e.*, that of the Kattumavadi station, no overstorage was discovered. In the instance last mentioned, the Superintendent with some of his subordinates was dismissed.

41. The remarks of the majority of the Commission with regard to the variation in different districts in the matter of wastage and "gain by weighment" refer to average results; but average results can lead to no correct conclusion, without an analysis of the details. Supposing, for instance, that in one case in Ganjam, a heap disposed of within 30 days of storing has exhibited an excess of 1 per cent.; in another in Tanjore, a heap stored by a Superintendent who, on the discovery of the fact, was severely punished, has given as much as 5 per cent. excess; and in a third case in Tanjore, a heap has been washed away by a cyclone; is it fair to conclude from such varying results, that the accounts of storage and out-turn all round are unreliable?

42. It was only in two districts that there was, during the 5 years ending 1869-70, "gain by weighment" to an extent that can be considered to be suspicious; during the succeeding 5 years, not only such gain by weighment disappeared, but its ratio to recorded contents of heaps fell from an average of 1.05 to 1.19 per cent. on the East Coast, and such as it has been, the excess may fairly be attributed to the selling officers giving short weight with the view to avoid wastage, as well as

to the inaccuracy of the weighing instruments. Purchasers will not mind a trifle less, and a trifle reserved out of each maund of salt would make twice as much as the average percentage of the excess for the whole Presidency for the latter five years. The variation of wastage in different districts may not be explainable by difference in the quality of the salt, in the climate or in the mode of storage; but it seems to me to be explainable by difference in the quality of the different weighing machines.

43. With respect to the improvement observable in the storage and out-turn accounts of later years; it is argued, that the improvement may be merely apparent; and due to greater astuteness on the part of the officials who, seeing that low rates of wastage and the appearance of gain by weightment were exciting suspicion, have latterly been squaring matters. What then prevents the astute officials from making the gain by weightment to disappear totally and bringing the wastage up to what may be considered to be the standard of correct storage? Indeed, if on the one hand, gain by weightment proves overstorage, and, on the other, its absence only shows the astuteness of the officials; it is hard to conceive how else is the correctness of the correct storage to be demonstrated. I fail to understand the gist of the argument, that the subordinate officers "are contented with comparatively small and safe gains when they might make larger but with increased risk of detection." If they can safely appropriate to themselves 4 or 5 per cent. of the excess in a heap, surely there is nothing to prevent their appropriating also the fractions of a decimal which they exhibit in their accounts, without any increased risk of detection. The entire hypothesis of astuteness is inconsistent with the irregular results exhibited by the storage and out-turn accounts, which are in their turn so much commented upon.

44. The Honorable P. Macfadyen, the managing member of the firm of Messrs. Arbuthnot & Co., which carries on a large trade in salt, at the Railway stations, in his memorandum printed in Appendix E to the Commissioners' Report, (No. 2), says in reference to salt purchased wholesale at the Madras depot, that "in selling heaps by retail, it has been found that they are not unfrequently short of 2,400 maunds," their recorded contents. This at any rate precludes the supposition that overstorage is systematically carried on to any large extent. The only other testimony which, so far as I am aware, this Commission has collected on this point, is that given by Mr. Cammiade, another wholesale trader in salt by rail from Madras. This gentleman (vide same Appendix No. 4) speaks as follows:—

"At present at the Madras Cotours (Depôt), the Superintendent and his subordinates have apparently no direct inducement to overstore, as the salt is never sold until four months after storage, and generally not for a year later, so the man, who stores a heap, does not know who will buy it, and there is such keen competition in the trade, that I think that if any thing of the sort were attempted, it would soon come out." As regards the particular point of the wholesale purchasers' gain out of the 5 per cent. discount, Mr. Cammiade says, "The average gain in buying a whole heap is from 1 to 2 per cent., i. e., the real wastage is from 4 to 3 per cent. * * *. In October 1875, wholesale merchants, &c., were selling salt by retail from their heaps on the Madras platforms in two-maund bags, (i. e., the bags alluded to above) at Rupees 3-13-0 per bag. The price for the same bags now is Rupees 4-2-0. I have known cases of excess in heaps which my firm have purchased wholesale. There were some cases last year. They are unfrequent. I believe that Superintendents habitually store a little excess salt in each heap, so as to reduce the wastage. They have found by experience that men who store accurately have difficulties in explaining deficiencies caused by natural wastage and have seen them get into trouble about it."

It will be seen from the whole tenor of this gentleman's statement, that he cherishes no friendly sentiments towards the officials of the salt department. If, therefore, he believed in the existence of systematic or at all considerable overstorage, he should have had very little difficulty in reconciling an assertion to that effect with a denial that he on his part ever realized any gain in this respect; he should have had only to add that he could not secure the favour of the subordinate officials.

45. That Government does lose to some extent from smuggling and fraud I do not for one moment deny, and indeed, in a system of taxation like that of salt tax in India, it is impossible that loss in this way can be altogether avoided. Neither do I mean to say, that such loss as now occurs cannot be reduced by more effective administrative arrangements; but my impression is, that compared with the opening for smuggling and theft there is, the extent to which the revenue is now actually lost in Madras is remarkably small.

46. It is admitted that a "magnificent" revenue is obtained at a very small cost; a fair rate of licit consumption—a rate, I presume, yet nowhere else attained under British Administration in India—has been secured; the salt supplied is a fair and wholesome commodity, and is available to the consumer at a price very moderate considered with reference to the duty realized. The trade in salt is in a perfectly healthy state; indeed the competition is so keen, that the commodity is carried to every nook and corner, and there is hardly a village in the Presidency without a bazaar, where salt can be readily had at all times; in short, if there is a commodity everywhere and always available more than another, it is salt. Within the last fifty years the sales of salt for "home and inland consumption" have increased from a ten years' average of 39,20,201 maunds to one of 66,43,692 maunds or nearly 70 per cent., notwithstanding that during this period, the duty has been about trebled; and making every allowance for the expansion of the area of consumption by the facilities of communication afforded by railways, and by changes of fiscal arrangements in tracts beyond the limits of the Presidency; I think there can be little doubt that the licit consumption within the Presidency has fully kept pace with the increase of population and the general progress of the country. It is true, that the revenue can be further increased by the prohibition or full taxation of the manufacture of earth-salt in those tracts where it has hitherto enjoyed special concessions, the effectual suppression of it where it continues to be carried on illicitly, and more effective arrangements with the French Government in respect of salt supplied for consumption within its territories; but these measures by no means involve an abandonment of the monopoly, which on the whole has worked so satisfactorily.

47. I have no objection, however, to the excise system being introduced by way of trial into a few small stations at first, and to its being gradually extended to others, if it is found to succeed. Indeed, I should like to see the system thus tried, to obtain practical proofs of its success or failure. I have no doubt, that due care will be taken to guard against a failure of supply, which would be the inevitable result of hasty action.

48. I regret also that I am unable to accept the results arrived at by the majority of the Commission as regards the cost to Government of the monopoly salt and the rate of licit consumption in this Presidency.

49. In the letter of the Government of India, a self-supporting system of excise is defined as one under which "the licensed manufacturer defrays all expenditure which Government incurs to secure itself against any violation or evasion * * * of the excise law and rules," and it does not appear to me, that a share of the cost of general supervision by the Collectors of Districts and the Presidency Board of Revenue, or the entire cost of the departmental administration, comes under the head of such expenditure. It seems to me, that the collection of duty and accounting for it, as likewise the general administration of the department, form no part of the licensed manufacturer's obligation under the excise law and rules, and I do not suppose that in Orissa, where alone a self-supporting system of excise, as it is defined, is in force, any charge is made on the manufacturers on account of a proportionate share of the salary and allowances of the Covenanted Deputy Collector, the Commissioner of the division or the Member of the Board of Revenue in charge of the salt and other branches of the Revenue.

50. I would exclude, therefore, the three-pie charge for general supervision and also one-third of the cost of the establishments and contingencies, as debitable to general revenue charges. A similar proportion should be taken also out of the

interest on the original cost and repairs of the office buildings; but it must be very inconsiderable. One-third of the contingent charges is probably a little too much, and this would cover the omission in respect of office buildings.

51. By these deductions, the average aggregate cost of the monopoly salt on the East Coast will be reduced to 3 annas 0·2 pies per maund thus:—

	A.	P.
Land assessment	0	0·1
Payment to manufacturer	1	5·7
Works for salt manufacture	0	1·5
Establishment	0	4·3
Contingencies	0	0·4
Police	0	5·8
Miscellaneous	0	3·5
Works for storage and revenue purposes	0	1·2
Sundry works and charges for public convenience...	0	0·5
Interest on value of stock	0	1·2
	<u>3</u>	<u>0·2</u>

52. As regards the rate of consumption, 11·38 lbs. per head exclusive of the licit consumption of earth-salt in Bellary, Cuddapah and Kurnool, obviously means nothing. The rate of 12·38 lbs. inclusive of it, seems to me also to be incomplete in that it does not take into account the equally licit consumption of earth-salt in Malabar, South Canara and Mysore. It is true, that no data for framing a reliable estimate of the extent to which this salt is consumed in the tracts last mentioned are forthcoming; but it seems to me nevertheless, that as fair an estimate as the available materials would admit of should be made, only taking care not to exceed the mark. This element in the calculation of the rate of consumption cannot, I think, be passed over as an insignificant matter.

53. As regards Mysore, 57,000 maunds made and 32,000 maunds consumed, is on the face of it too small a quantity. During the enquiries instituted on the subject of earth-salt in 1871, the Collector of Coimbatore reported,* that earth-salt was coming from Mysore into the adjoining taluk of Kollegal in his district, and that it was only distance that prevented its advancing further. Indeed, judging from the geographical position of this territory and of the districts of Bellary, Cuddapah and Kurnool, I do not see why the production of earth-salt therein should be so infinitely less.

54. As respects Malabar and South Canara, we have seen to what extent the effect of the convention of 1865 with the Native States of Travancore and Cochin, by which the monopoly selling price in those States was raised to an equality with the rate in force in the British territory, has been nullified by the spread of the Malabar earth-salt, of which the manufacture was about the same time declared by Judicial authority to be legal. We have seen also what quantities of salt, the greater portion, if not the whole, of which must have been earth-salt, have passed by rail from Tirur in Malabar into Coimbatore in 1873-74 and 1874-75. On the whole, I think, that, on the lowest calculation, we may take the population consuming earth-salt in Mysore, Malabar and South Canara to be a million and a half.

55. It seems to me also, that eight lakhs of maunds is more than we are fairly warranted in assigning out of the Madras salt to the Nizam's dominions. The estimate rests mainly on the rate of consumption assumed for the districts of Godavery and Kistna and North Nellore from which salt passes into those dominions. The correctness of this, however, seems to me to depend mainly upon the rate arrived at in the sequel for the Presidency as a whole, and this latter is obviously imperfect in that it does not include the licit consumption of earth-salt in Mysore, and the two districts of Malabar and South Canara. The rate of consumption arrived at, on a fair calculation, for the isolated tract composed of the two districts of Tinnevely

* Letter, dated 24th April 1871 in G. O., 13th February 1873, No. 179.

and Madura and parts of Coimbatore and Trichinopoly, is 14 lbs. per head, and I do not see why Godavery, Kistna and part of Nellore should have only 12 lbs. assigned to them. I do not suppose there is any material difference in respect to the prevalence of illicit manufacture, between these two tracts. On the other hand, I should suppose that the people of the northern districts require more salt, because they take more pungent food.

56. Any calculation having reference merely to the probable total consumption in the Nizam's territories, and the known exports from Bombay must be defective. We know that earth-salt goes into those territories both by rail and by carts from the Ceded districts and Kurnool, and we know too that this kind of salt is made also in those territories. What is there made is said no doubt to be very little; but we cannot accept the reports of the local authorities in Hyderabad as correct, since naturally they would not admit the existence of unrecognized manufacture, without admitting at the same time their neglect of their own duty.

57. I would calculate the exports to Hyderabad as follows:—

	Maunds.
Sales in Godavery, Kistna and the three northern taluqs of Nellore...	13,47,476
Deduct estimated consumption of Godavery, Kistna and the 5 northern taluqs of Nellore at 13½ lbs. per head ...	5,94,104
Exports from the 3 Nellore works to the Cumbum and Markapur taluqs in Kurnool ...	49,394
	<u>6,43,498</u>
Remainder...	7,03,978
Add exports to Hyderabad from the Madras Cotaurs...	14,680
Total exports to Hyderabad... or say...	<u>7,18,658</u> <u>7,20,000</u>

I would then work out the rate of consumption for the Madras Presidency, cum Mysore and Coorg, thus:—

	Maunds.
Total sales for home and inland consumption on the average of 5 years ending 1874-75, plus importations on private account...	64,33,528
Deduct for	
Hyderabad (tract c) ...	7,20,000
Orissa proper (tract d); being difference between its own sales and consumption ...	6,395
Do. Tributary Mehals and the portion of the Central Provinces, south of the abolished portion of the Inland Customs' line (e,f) ...	2,64,138
Undefined tract beyond and round the portion of the Central Provinces, which lay south of the abolished portion of the Inland Customs' line ...	2,50,000
	<u>12,40,533</u>
Balance available for the Madras Presidency, cum Mysore and Coorg (tracts a and b)...	51,92,995
Population of do. do. less 4½ millions of people eating earth-salt in the Ceded Districts and Kurnool and in Malabar, &c. ...	32,463,649
Rate of consumption per head ...	<u>13·16 lbs.</u>

18th September, 1876.

T. VENKASAMI.

MINUTE OF DISSENT BY THE PRESIDENT.

I do not concur in the opinions expressed in Chapter IV. of the Report with respect to the quality of the Madras monopoly salt. I think, on the contrary, that the objections which Mr. Falk has urged against it are to a considerable extent well founded; that the produce of some of the works is of doubtful wholesomeness; and that the salt, taken as a whole, is decidedly inferior in point of commercial value, and unnecessarily dear at the price which Government and the public pay for it.

2. First, as regards the wholesomeness of the salt. The brine supply at several of the works is drawn from navigation canals, or backwaters, which form the natural drainage channels of the surrounding country, and whose communication with the sea is liable to be cut off at any time during the manufacturing season. The frequent and heavy showers that fall from May to August (see Statement No. V., Appendix C), when manufacture is at its height, wash into them human excreta and other impurities from the surface of the lands which they drain, and their waters are further polluted by filth dropped from the boats which ply upon them. In years when the N. E. monsoon is light, the bars at the mouths of these backwaters are only partially scoured by the monsoon floods, and soon after the rains have ceased they silt up, forming complete barriers against the ebb and flow of even spring-tides. When the bars are thus closed, the backwaters behind them become mere stagnant pools of salt water; and any impurities passing into them are impounded, to be baled up into the pans along with the brine, and deposited in combination with the salt as evaporation progresses.

3. The above remarks apply, in particular, to the large works which supply the town of Madras and the railway traffic thence with inland districts. They are also true, in greater or less degree, of the works at Negapatam, Gundalam, and Womaravilly, and, perhaps, of other works also which I have not visited.

4. The Madras works get their brine from the great Northern Canal. That portion of the canal on which the salt-works lie is mainly fed with sea water through the bar at Ennore: and the Ennore bar has been closed during two of the last five seasons—once in the year of Mr. Falk's visit, and again this year.

5. At the Negapatam works the supply is drawn partly from the Negapatam and Vedaranyam Canal and partly from pits dug alongside the pans and filled by percolation from the canal. The impurity of this brine, and the large percentage of organic matter contained in salt made from it, are noticed in paras. 156 and 362 of our report.

6. The main supply channel of the works at Womaravilly runs through the town of Calingapatam, and receives house sullage and surface drainage from part of the town. The drainage of another part of the town flows into the backwater with which the supply channel communicates, and the bar at the mouth of this backwater has been closed several times of late years.

7. Dr. Ratton gives the following account of the pans and brine supply at Gundalam (pages 4 and 5 of his Report of 1873):—

"At one place, where the pans are supplied from the northern or closed end of Lawford's Canal, the brine is of doubtful purity. There is no great current at this end, but rather the water inclines to stagnate as the tide enters the canal from the south, and has to pass through a small culvert under the otherwise solid bridge before reaching it. A coconut tope lines the bank, and under its cover the water's edge is much frequented in the early morning by natives of the old town of Cuddalore. Two pukka latrines, for their convenience at all times, are built on the sloping canal-bank. Two or three sewers, draining from the thickly populated native town, discharge into the canal here, and the jail night-soil is shot out somewhere about its upper extremity. With such sources of contamination it is to be feared that this brine is sometimes, at low tide for instance, unfit for salt manufacture."

8. My colleagues, while unwilling to express any positive opinion on the question whether the organic matter contained in Madras salt is noxious or the reverse, incline to the belief that it is not injurious to health, because (para. 362) "there is reason to believe that all known forms of vegetable life are decomposed in the process of evaporation of the brine, and that such organic matter of this kind as is found in the salt is dead." I am not sufficiently well versed in chemistry to know how this may be; but I much doubt whether, from a sanitary point of view, objections do not exist to the consumption of salt with which sewage has been mixed in any quantities and under any conditions. That salt made from sewage-tainted brine by the process followed at Madras salt-works is unwholesome, and dangerous as a vehicle for the spread of contagion, is, I think, certain for the reasons given in the following extract (para. 11) from Dr. Ratton's Report of 1873. Dr. Ratton is here referring to the Gundalam salt; but the system of manufacture described towards the end of the quotation is followed at most, if not at all, the works on the East Coast:—

"Believing, as I do, in the theory of the propagation of some grave diseases by their germs set free in water through the taint of sewage, I think it possible that salt scraped from this brine might convey infection. For, although all organized forms contained in brine, as a rule, perish and are oxydised during the process of its evaporation to crystal formation, this safeguard is removed here by the system of shallow irrigations, which often necessitates a last one, introduced immediately before scraping, merely to clear the salt from mud."

9. The following extract from a report (No. 1120, dated 8th May 1876) addressed to the Commission by the Collector of Madura, shows that an outbreak of cholera that occurred in that district in the early part of the current year was attributed by the natives to the use of salt from the Negapatam works:—

"The Negapatam salt was universally found fault with as being black, generally unwholesome, and the fertile source of skin-diseases. People went so far in their dislike to it that during the course of the late cholera epidemic some traders in the Periacolam taluq were mobbed for breeding disease through dealing in this salt. I have very little doubt personally that these objections to the use of Negapatam salt were simply fanciful, and would never have arisen had it not happened to be new to the people, and nasty to look at, and had its introduction into the district by the opening of the railway not happened to coincide with a very severe, widespread, and fatal outbreak of cholera."

The Collector may or may not be right in disassociating the use of Negapatam salt with the cholera outbreak as cause and effect, but the subjoined

analysis of the specimen of this salt examined for the Commission by Dr. Hazlett shows that it is not above suspicion:—

Moisture.	Insoluble Matter.		Sodium Chloride.	Magnesium Chloride.	Calcium Chloride.	Magnesium Sulphate.	Calcium Sulphate.	Unaccounted for.
	Organic.	Inorganic.						
11.038	.541	5.130	77.817	2.839	—	.417	2.431	+ .213

10. The results of the analyses of salts from the Madras (Ennore) works reported by Dr. Hazlett do not show any excess of insoluble impurities, organic or inorganic; but it is to be noted in this connexion that the salts examined by Dr. Hazlett were manufactured in 1875, a year in which the Ennore bar was well open, and conditions were generally peculiarly favourable for salt manufacture. No complete analysis was made of salt from the Womaravilly or Gundalam platforms.

11. The average annual produce of each of the works above referred to is shown in the margin. It aggregates Indian maunds 17,82,563, or more than one-fourth of the gross annual outturn (Indian maunds 60,77,459) of all the works on the East Coast. The works at Gundalam and Negapatam should, I think, be abandoned; but the defect at Madras and Womaravilly can be cured,—at Madras, by using artificial means to keep the Ennore bar open,—at Womaravilly, by cutting a new supply-channel communicating directly with the sea. Backwaters which are not subject to the full and regular influence of the daily tides are, I think, objectionable as sources of brine supply for salt manufacture. The objection is intensified when they are used as canals for navigation.

12. Mr. Falk further challenges the wholesomeness of Madras salt on the ground that it contains "from 2 to 3 per cent of chloride of magnesium and other bitter salts, which affect the mucous membrane and the skin most seriously, and must cause a considerable amount of suffering." Our analyses confirm Mr. Falk's statement on this point, as the 41 specimens analysed by Dr. Hazlett were found to contain on an average 2.632 per cent of chloride and sulphate of magnesium.

Names of Work.	Chloride Magnesium.	Sulphate Magnesium.	Total Magnesium Salts.
Nowpada ...	2.815	1.027	3.842
Peangudum ...	3.705	...	3.705
Merkanam ...	8.337	...	3.337
Naidavasal ...	3.542	...	3.542
Vedaranyam ...	3.020	...	3.020
Negapatam ...	2.839	.417	3.256
Kadbad ...	2.153	1.137	3.290
Col. patam ...	4.502	.265	4.767

from which I have already quoted, that the magnesian salts present in Madras salts are "injurious to health," and, indeed, the chief object of the method of manufacture which he advocates is to obtain a salt that shall be free from these impurities. I believe that Dr. Ratton is right, though no doubt the ill-effects of magnesian salts are mitigated in the case of Madras consumers by the circumstance that they have become accustomed to their use. Complaints of the salt on this score are not, however, entirely wanting.

13. As regards the commercial value of Madras salt. Dr. Hazlett's analyses show that it contains 9 per cent of water, 6 per cent of dirt and chemical impurities, and only 85 per cent of sodium chloride. These facts at once stamp the salt as marketably of very low quality; but, perhaps, the best means of judging of its commercial value is to compare it, in respect of composition and price, with Konkan salt, which is also made from sea water, and under climatic and general conditions very similar to those existing at the salt-works on the East Coast. This comparison will be the more useful, because the main question set for our consideration concerns the substitution of excise for the monopoly system now existing in Madras, and Bombay is the only place in India at which there is any large manufacture conducted on the excise system. It is not my object to vaunt the produce of the salt-works with which I am officially connected; and, to prevent misconception, I may here state my opinion that Konkan salt is the next worst to Madras salt of all salts that enter largely into consumption in India. It is inferior to the British and French salts imported into Bengal, and to the salts from the Panjab mines, the Sambhar Lake, and Pachbadra, which are used in the North-Western Provinces, Oude, and the Panjab.

14. The specimens of Konkan salt analysed for the Commission were obtained from the Government monopoly depôts on the Malabar Coast. These analyses, and the facts relating to the demand for and distribution of this salt, noticed in the chapters on "Quality" and "Distribution," go to show that chemically and commercially it is as good as the ordinary run of Madras salts; but it must not be supposed that salt from the Malabar depôts is representative of ordinary Bombay salt. Only the cheapest and worst kinds of Bombay salt are purchased for the Malabar Coast monopolies,—kinds for which there is little or no demand for export elsewhere. We obtained a number of specimens of the salts made for home and inland consumption in Bombay, and intended to have had them analysed; but for want of time Dr. Hazlett was unable to examine more than one specimen. It is unsafe to build general conclusions regarding the composition of any salt on a single analysis; I have, therefore, obtained from Dr. Lyon, Chemical Examiner to the Government of Bombay, analyses of specimens of average salt from each* of the Konkan salt-works. The average results of these analyses, and of Dr. Hazlett's analyses of Madras salts, and of Bombay salt from the Malabar depôts, are exhibited in the following table. I have added also the average results of 22 analyses of Madras salts examined by Dr. Mayer in 1854, which I have taken from the Appendix to Plowden's report with an object to be explained hereafter:—

	Moisture	Insoluble Matter.		Sodium Chloride.	Magnesium Chloride	Calcium Chloride	Magnesium Sulphate	Calcium Sulphate
		Inorganic.	Organic.					
Madras salts analysed by Dr. Hazlett, 1876	9.281	1.730	.156	84.889	2.233	.135	.399	1.315
Average Bombay salts analysed by Dr. Lyon, 1876....	4.22	1.37	.15	90.51	1.35	...	.49	1.51
Bombay salt from depôts on the Malabar Coast analysed by Dr. Hazlett, 1876	7.336	1.226	.255	85.931	2.772	.139	.048	2.544
Madras salts analysed by Dr. Mayer, 1854	6.968	3.116		87.320	.998	.634	...	.449

* Note.—The analysis of Trombay salt failed through accident, and has, therefore, been omitted.

15. These figures show that, in composition, Madras salt is distinctly inferior to Bombay salt, and especially with respect to endurance. The loss by wastage in Madras salt must be very great. It remains to compare their prices. We have shown in the chapter on "Cost" that the average cost to Government of the salt brought to sale in Madras during the last ten years, exclusive of revenue charges of all kinds, is 1 anna 10.9 pies per maund. The cost during the last five years has averaged 2 annas 0.7 pies per maund. These figures represent the items of cost under monopoly that correspond with the manufacturer's first-hand price under excise. During the same period the average price of Konkan salt, of quality similar to that analysed by Dr. Lyon, has been 1 anna 8 pies per maund, while the price of salt of the quality supplied to the Malabar Coast monopolies has averaged 1 anna 1 pie per maund. Out of the price realized the Bombay manufacturer has to pay rent to Government for the land occupied by his salt-work, whereas the Madras manufacturer enjoys his land rent free. This charge averages at the Konkan works 2 pies per maund sold: so, in comparing the prices of Bombay and Madras salts, a deduction of this amount must be made from the Bombay price. The charge at the rate of 0.1 pie per maund, which we have added to the cost of Madras salt on account of "land assessment on cultivable land" (see paras. 401—405), must also be excluded. Applying these corrections the comparison for the last five years stands as follows:—

Average cost per maund of Madras salt	... 2 annas 0.6 pies.
Ditto of ordinary Bombay salt	... 1 anna 6 pies.
Ditto of Bombay salt of the kind supplied to the Malabar Coast monopolies	... 11 pies.

Weight for weight, then, Bombay salt, about equal in quality to Madras salt, is sold for less than one-half the price of the latter, while the price of ordinary Bombay salt, containing 6 per cent more sodium chloride than Madras salt and superior to it in travelling qualities, dryness, hardness, and cohesion, is 25 per cent below that of Madras salt.

16. So far as what I have seen of the salt-works of both presidencies enables me to form a judgment, there is nothing in the ~~topography~~ *circumstances* of the works or conditions of manufacture to make the production of good salt more difficult in Madras than in the Konkan, or to make the cost of production of salt greater at works on the East Coast than in Bombay. It is difficult to calculate correctly the actual cost of production; but the rate usually accepted for the Konkan works is 9 pies per maund, while 8 pies is the rate arrived at for Madras works. The Bombay works enjoy one great advantage in obtaining their brine-supply by direct flow from the sea, while at most of the works in Madras the brine has to be lifted by manual labour. But in other respects the advantages are on the side of the works on the East Coast. The cost of constructing and maintaining works lying below high-water level on land reclaimed from the sea must, of course, be much greater than construction and maintenance charges for works lying above the reach of the tides; the silt and fluid mud that accumulate during the monsoon in the low-lying Bombay pans must be scraped and baled out every year, rendering the preparation of the pans for manufacture a much longer and more costly process than it is at the works in Madras. Again, the manufacturing season extends over more than 5 months on the East Coast, but over only 3 months in Bombay; and the concentrated pit brine available at many Madras works is entirely wanting in Bombay. It is to be noted, also, that at the Madras works (in Madura and Tanjore) which are fed with brine by direct flow from the sea, the rate of Kudivaram paid the manufacturers is the same as at neighbouring works at which the brine has to be lifted.

17. We have endeavoured to show in Chapters V. and IX. how the cost of Madras salt has been enhanced by the action of the monopoly; the defects in its composition are also, I think, distinctly traceable to the same cause. Its chief de-

fects, apart from those connected with impure brine-supply, are excess of magnesian salts and moisture, and these result from the evaporation of the pan brine to too high a degree of density and the scraping of the salt before the crystals have sufficiently matured. It is no object to the Madras manufacturer to make the best salt he can; superiority of quality does not bring him increased price. His object is to make as much salt as he can by the quickest and least troublesome method. He has found by experience that the quickest and most productive method of making salt is to expose brine in shallow irrigations, as evaporation is rapid in proportion to the shallowness of the volume exposed, and that almost any salt will pass muster so long as it is cleanly scraped. He, therefore, irrigates his pans to a depth of 1 inch or $1\frac{1}{2}$ inches, allows the water to dry off, and scrapes the product every second or third day. The crystals of salt thus made are, of course, soft and hollow, and impregnated with magnesian salts. The chloride of magnesium attracts moisture, and the salt holds it like a sponge. In Bombay, where quality is a material object to the manufacturer, as it pays him better to make salt that will sell at 2 annas a maund than salt which will sell at 1 anna, the pans are irrigated to a depth of from 4 to 6 inches, and the salt is scraped only once a fortnight (in the early part of the season once in twenty days) and before the water of the brine has wholly dried away.

18. There is some reason for believing that the irrigations used at Madras works have become more shallow of late years, and that from this cause the quality of the salt produced has deteriorated. It appears from the appendices to Plowden's report that in 1854 the irrigations were usually 3 or 4 inches in depth, and that the salt was scraped every sixth day. And on comparing the results of analyses of Madras salts made by Dr. Mayer in that year with those of Dr. Hazlett's analyses (see para. 15 *supra*) we find that, while the percentage of magnesian salts present has increased from .998 to 2.632, and of moisture from 6.968 to 9.281, the percentage of sodium chloride has diminished from 87.320 to 84.839. A marked decrease is at the same time observable in the quantities of insoluble matter, indicating that the salt is now more cleanly scraped than formerly. This comparison is not, however, entirely satisfactory, as the specimens examined by Dr. Mayer came from inland markets, while those analysed by Dr. Hazlett were taken direct from the stores at the works.

19. I think, then, that there is very pressing need for improvement in the quality of Madras salt, and I fully agree with the majority of my colleagues in the opinion that the most effective and the cheapest means of securing improvement is to substitute the excise system for the monopoly. The quality might, no doubt, be improved under monopoly, by the firm rejection of all salt not coming up to an improved standard. But if a better kind of salt were demanded from the manufacturers, they would have an irresistible claim to increased rates of Kudivaram, as it costs more to make good salt than bad.

20. There is at present fair competition between the merchants who supply the large railway traffic from Madras, and prices in consequence run low all along the lines of railway. But such has not always been the case. From 1860 until about four years ago Mr. Cammiade held virtually a monopoly of the railway traffic, and it appears from reports of the Chief Commissioner of Mysore and the Traffic Manager of the Madras Railway that prices were higher up to about 1872 than they have been lately, although there has been no change since 1869 in the first-hand price of salt or in the railway rates for its carriage from Madras. An account of this traffic is given in para. 495 of the report. It averages some $10\frac{1}{2}$ laks maunds a year, but only three firms are now engaged in it, and two of the three (Messrs. Arbuthnot & Co. and Parry & Co.) contemplate retirement. If they should retire, and Messrs. Nagapa Chetty & Co. are left in sole possession, the high prices of Mr. Cammiade's monopoly are not unlikely to return. The quantities of salt despatched by railway from Bombay and stations in the Konkan average $14\frac{1}{2}$ laks maunds a year, but the business

is divided between more than twenty persons. It would seem, therefore, that the monopoly in Madras has had the usual effect of all monopolies in concentrating the wholesale trade in the hands of a few rich firms, and that danger is not absent of a sudden rise in the price of salt over the large area supplied by the Madras Railway.

21. In the estimate of the cost of Madras salt made in Chapter V., charges on account of assessment on land occupied by salt-works have been excluded. It is true that from the earliest days of the monopoly Government has refrained from levying land assessment on the monopoly salt-works; but such remission has been made solely in the interest of the monopoly, and the loss arising from it seems to me clearly to be an item of constructive loss that would be avoidable under a system of excise, and, therefore, one which under our instructions ought to be included in the estimate of the cost of the salt. At the monopoly works in Bombay a cess of 9 pies per maund is added to the selling price on account of "ground rent;" at the excise works in Bombay the charge amounts to 2 pies per maund sold, and is levied from the manufacturers either as a direct cess or as an acreage charge. The excise manufacturers in Orissa pay land assessment to the Zemindárs at the rate of 3 pies per maund produced; and in the case of the South Kanara monopoly salt-works, which are situated on estates held by private persons at lump-sum assessments, the Madras Government remits to the holders the rent of the areas occupied by salt-pans, and the remission amounts to 6 pies per maund brought to store. I think that the assessment on East Coast salt-works may fairly be rated at 2 pies per maund brought to sale, and I would add a charge of that amount to our estimate of cost, in lieu of the charge of 0.1 per maund therein made on account of land assessment on the arable portions of the salt-works. Making these corrections, the average cost of East Coast salt for the last 10 years will amount to 3 annas 7.6 pies a maund, and the net excise realized since 1869, when the selling price was raised to its present rate, will be Rs. 1-10-7.4 per maund.

22. I desire also to record my opinion that necessity exists for the larger employment of Europeans in the Madras Salt Department. Almost all the Deputy Collectors and all the Superintendents are natives; and with their assistance alone I do not think that the Collector will be able to put down fraud, or over-storage, or illicit manufacture. It is the experience of the Bombay Salt Department, and, I believe, also that of the Inland Customs Department, that for the suppression of fraud and abuses, and for the strict and efficient enforcement of the regulations necessary for the proper management of salt-works, European supervision is essential. Native subordinates work much better and more honestly when they are immediately supervised by European officers than when their superiors belong to the same class and caste as themselves. I would recommend that the Collector be allowed a European Assistant for each Deputy Collector's charge, and that European officers be placed in charge of some of the principal salt-works. The extra cost of a European establishment will, I believe, be repaid at once and many times over by the revenue now lost which it will recover. The rate of *licit* consumption over Madras and Mysore with their 37,000,000 inhabitants is only 11.3 lbs. a head, whilst there can be little doubt that the actual rate of salt consumption in Southern India is, at least, 14 lbs. a head. Indeed, we have shown that in Tinnevely and Madura and part of Coimbatore and in the neighbourhood of Madras itself—districts in which at present illicit salt is certainly not absent—the rate of *licit* consumption probably exceeds 14 lbs. There is no danger of smuggling from the sea on the East Coast, as no foreign salt is there carried coastwise, neither are the land frontiers of Madras threatened by untaxed foreign salt. All danger is from within, and there is no apparent reason why with efficient establishments and good management illicit consumption should not virtually disappear in Madras. The rate of *licit* consumption may, I believe, be increased by, at any rate, $2\frac{1}{2}$ lbs. a head; and if this result be achieved, the salt revenue will be increased by 18 or 20 laks of rupees a year.

23. Two statements in the minute of dissent which Mr. Venkasami Row has recorded, require some notice at my hands. In his 2nd, 3rd, and 4th paras. he contrasts the relative advantages of a stock account and check weighments at preventive stations as a safeguard against the fraudulent removal of salt from the stores, and he proceeds to state that under a system of excise it is practically impossible to weigh salt into store, or to test heaps by re-weighment after they have once been stored. In both these particulars Mr. Venkasami is mistaken, probably from the circumstance that he has never seen a salt-work managed on the excise system. At the North Kanara excise works the salt is actually weighed into store, and at the Konkan excise works test weighments of stored heaps have been and still are taken. I have now had five years' experience in the management of salt-works both on the excise and monopoly systems, and I think that under either system both an accurate stock account and check weighments are necessities, and that, as far as risk of the fraudulent removal of stored salt is concerned, there is no difference between the two systems. I have no doubt that the system of storage and test of storage now existing at Madras works might be continued there under excise without any practical difficulty whatever.

24. The specimen of Tuticorin salt to which Mr. Venkasami Row makes reference in his 17th para. is not a representative specimen of Tuticorin salt, as observed in para. 354 of our report. The average results of Dr. Hazlett's analyses of Tinnevely salt are given in para. 355, and they show that the salt is of very different composition from that of the single specimen from the Beypore depôt on which Mr. Venkasami Row relies. The Collector of Malabar informed us that he was unable to sell the Tinnevely salt he had in store except by forcing the sales—i.e., by compelling purchasers who wanted Bombay salt to take one-half the quantity of Bombay salt and the remainder in Tinnevely salt. The chief objections to the Tinnevely salt were, he told us, its bitterness and deliquescence, and the same objections were repeated to us by the merchants who met the Commission at Beypore. Such complaints would certainly be inapplicable to the specimen on which Mr. Venkasami Row founds his arguments, as it is a very dry salt and peculiarly free from the chlorides of magnesium and calcium and from magnesian sulphate, which are the causes of bitterness and deliquescence in salt.

C. B. PRITCHARD.

APPENDIX A.

In order to obtain information on certain of the points raised by the Government of India, the Commission, having been permitted to correspond directly with Collectors, addressed to them, through their Secretary, the following circular, dated 28th January, 1876 :—

You have doubtless received the orders of the Government permitting the Commission which has been appointed for the investigation of certain questions connected with the salt system of Madras to place themselves in direct communication with Collectors of districts. I am now to state in what way the Commission desire your assistance in carrying out the task assigned them.

2. The general scope of the inquiry which has been ordered will be apparent to you from the accompanying copy of the Resolution* of the Government of India, Department of Revenue, Agriculture, and Commerce, Nos. 379—381, dated 18th November 1875. The points on which the Commission at present desire information are the following: (1) Composition or quality of salt, (2) price, (3) distribution, (4) consumption, (5) value of land occupied by salt works. The nature of the information required under these several heads is detailed in the following paragraphs, and I am to express a hope that it may be furnished as speedily and in as accurate a shape as circumstances will permit. The Commission must depend on the knowledge of local officers for most of their facts, especially as to the question of the actual cost of salt to the consumer, and they have no doubt that they will receive your hearty co-operation in carrying out the duty imposed on them.

3. *Composition or Quality.*—First then as to composition or quality of the salt. This question is twofold, involving (1), the quality of the salt issued from the Government Stores, and (2), its quality as it actually passes into consumption.

4. In order to the determination of the first point, I am to request that, if salt is manufactured in your district, you will be good enough to cause three specimens, weighing about 2 lbs. each, representing the best, average, and worst descriptions of salt sold, to be selected from the stores of each salt division. The Commission would suggest that the Salt Deputy Collector might be required to select the specimens himself, and to take particular care that each is a fair sample of the class of salt it is intended to represent.

5. For the purpose of testing the quality of salt as sold to consumers, I am to ask that the Tahsildars and Sub-Magistrates named in the enclosed list may be directed to purchase in the bazaars of their kaskahs, at the retail price of the day, 2 Annas' worth of the salt in common use. If more than one kind is sold, a similar sample of each salt should be obtained.

6. The samples, whether of salt from Government Stores or of salt purchased in the bazaar, should be carefully packed, and the package marked on the outside with the name of the district and place from which it comes and with the date of purchase, (if the sample was purchased), and forwarded by banghy post to the Secretary, Madras Salt Commission, Madras. A slip containing the same particulars should be enclosed along with each sample. As it is intended to make the purchased samples a means of testing price as well as quality, it is important that each should be an exact 2 Annas' worth, and that it should be so packed as to ensure it against wastage in transit.

7. I am further to request the favour of information as to whether any complaints have been or are made by consumers in your district as to the quality of salt supplied under the present system, such, for instance, as that it is bitter, wants flavour or strength, or is unwholesome or productive of cutaneous or other diseases, and whether there is any ground for supposing that the public would prefer or appreciate a better quality of salt. Is it anywhere the practice to re-dissolve and evaporate the monopoly salt before use in order to obtain a purer

* Already reproduced in the body of the report and not reprinted here.

article? Is it anywhere the practice for wholesale or retail dealers to adulterate salt before allowing it to pass into consumption? and if so, of what does the adulteration consist?

8. Is earth-salt made in your district, or is natural salt collected there? If so, to what extent and in what localities? Is salt of either kind used to mix with monopoly salt? If earth-salt is manufactured, be good enough to describe the process of manufacture.

9. *Price.*—As noticed above, the samples asked for are intended to show the prices as well as the quality of salt sold retail. But I am also to ask that you will be good enough to forward a list of any large centres of wholesale salt-trade that may exist in your district, and to state the average wholesale prices obtaining at each for the various kinds of salt sold.

10. *Distribution.*—With regard to the distribution of salt, I am to ask for a general sketch of the lines of salt-traffic through your district, showing clearly the usual routes by which salt enters and leaves it, the principal salt markets, and the sources from which each such market draws its supply.

11. I am also to request that you will state from what salt works, or if that be impossible, from what wholesale mart, the villages from which the samples asked for in paragraph 5 shall have been procured usually obtain their supply of salt, with particulars as to the distance it has to be brought, the kind of carriage used, and the rates of transport ordinarily prevailing. If any statistics of traffic have been collected in your district, please give the figures relating to salt. This will not be necessary in respect to railway traffic, the statistics of which the Commission will procure direct from the railway authorities. The rates of carriage from railway stations to the places at which the samples were purchased should however be given.

12. The Commission will also be glad to have information as to the usual mode of retail sale; whether the bulk of the consumers procure their supplies in the bazaars, from hawkers, or at the periodical markets; whether the custom of obtaining salt by barter prevails anywhere; and whether it is sold by measure or by weight.

13. *Consumption.*—I am to inquire whether it is usual to give salt to draught or other cattle, and if so, in what quantities and at what seasons of the year. Is salt ever used as a dressing for coconut-trees, or tobacco, or for other agricultural purposes, and can you give an approximate estimate of the quantity, if any, so consumed?

14. *Value of Land occupied by Salt-works.*—In illustration of the value of land occupied by salt-works, I am to request that you will be good enough to forward a statement in the enclosed form, (Enclosure No. 2),* for each salt division in your district. Column 2 should include the area of all reservoirs, salt pans, supply channels, platforms, waste land within the outer boundary, and communications appertaining wholly to the salt-works. In filling up Column 3 ("area fit for cultivation otherwise than with salt") it should be considered whether any of the land could not be used for coconut or casuarina plantations, and whether by the extension of irrigation works any part of the land could not be adapted to the growth of rice or other wet crops. In filling up Column 6 regard should be had to the rates paid for similar land in the neighbourhood. I am further to request that you will state whether the sites of any pans abandoned within the last twenty years have since their abandonment been brought under cultivation or otherwise utilized, and if so, what extent of land has been so utilized and what revenue it yields.

15. The Commission will be glad to receive a free expression of your opinion on the points above detailed, as well as on any others connected with the subjects of their inquiry.

16. For convenience of reference and to save time, this letter has been divided into separate sections, and I am to request that you will be good enough to forward the report relating to each head separately as soon as ready.

For convenience of reference the replies are brought together, either in full, or in sufficient abstract, according to subjects.

I. *Composition or Quality.*—Paras. 4—6 of the Commission's Circular are merely directed to obtaining specimens for analysis and references to this subject will be omitted here, the results of analysis and examination of all specimens being brought together elsewhere.

* 1, Name of salt division; 2, total area of salt works; 3, area fit for cultivation otherwise than with salt; 4, area unfit for cultivation; 5, assessment per acre of cultivable land, where assessed; 6, estimated rate per acre, where not assessed; 7, total area of land taken up in the last 10 years; 8, area included in column 7 on which compensation was paid; 9, area of cultivated land taken up during the last 10 years; 10, nature of cultivation on such land; 11, compensation paid for land shown in column 8.

The replies to para. 7 may be put together as follows.

GANJAM.—The Collector of Ganjam writes:—

"No complaints have been, or are, made by consumers in this district, as to the quality of salt supplied under the present system, either in regard to its being bitter, deficient in flavour or strength, unwholesome, or productive of cutaneous or other diseases.

"Although the public appear to be quite satisfied with the quality of the salt manufactured, and with the facilities which they enjoy for procuring it, I imagine they would appreciate a better quality of country evaporated salt if they were afforded the same facilities for procuring it, at the same or a lower fixed price, not otherwise.

"It is nowhere the practice in this part of the country to re-dissolve and evaporate the monopoly salt before use, to obtain a purer article. The only exception is in the case of the very small quantity of table salt consumed by Europeans.

"So far as can be ascertained, it is nowhere the practice in this part of the country for wholesale or retail dealers to adulterate salt before allowing it to pass into consumption. Owing however to accidents, or negligence on the part of traders in packing, carrying, and storing, the salt may not invariably reach the consumers in as pure a state as it left the Government stores."

VIZAGAPATAM.—The report of the Collector of Vizagapatam is as follows:—

"No complaints have been made regarding the quality of salt supplied. The people receive their supply generally from the salt pans in this district. Some of the most northern taluks receive it also from Woomeravilly and Nowpada, while one or two of the most southern draw it from Karapa of the Godavery District. Nowpada salt is not consumed below the Ghauts, but is carried on by brinjaries for sale in the Jeypore country and the Central Provinces. It is considered by the people in the plains that Nowpada salt creates itle, and they refrain from taking it in consequence, but the brinjaries prefer it as liable to less wastage, from its largeness and strength of the crystals. The Salt Superintendent of Pentacotta reports that when salt was first manufactured there in 1868, it was the general impression of the people of that place and its neighbourhood that the consumers of the salt did suffer somewhat from cutaneous eruptions, but latterly such complaints have never been heard of. The public are satisfied with the present quality of salt manufactured in this district, but they would certainly appreciate a better quality, provided no corresponding enhancement of price takes place. The present price of salt presses heavily upon the poorer classes, who so far from appreciating a better quality of salt sold at enhanced rates, would prefer salt of even an inferior description if sold at a lower price.

"It has been ascertained that it is nowhere the practice among the natives to re-dissolve or evaporate monopoly salt before use, to make it purer. Salt is only re-dissolved and boiled to make it pure white for the table use of the European community.

"There are very few wholesale dealers in the district, but such as there are do not adulterate salt. Adulteration is practised by the retail dealers only, who use the sand on the salt platforms for the purpose. Even this is not universal but prevails to a very small extent. The salt issued from some of the kotas is sometimes dirty. I found last year very dirty salt at Karasa, but in the absence of a better description people cannot but take it. The Salt Deputy Collector states that the adulteration is also produced by mixing earth-salt or natural salt or salt-earth; but this statement is not borne out by the information I have received from the various taluks; and I have reason to suppose that this is not the case. The persons who are supposed to collect salt-earth, and natural salt and to make earth-salt, are not the retail dealers, but belong to the classes who collect them for their own use, being unable through poverty to buy monopoly salt."

GODAVERY.—The Collector of the Godavery District reports that no complaints are made of the quality of monopoly salt, and that the people seem to be satisfied with it. It is not the practice to purify it by re-dissolving it, nor does it get adulterated while in the hands of the traders. Earth or natural salt is never used to mix with it.

KISTNA.—The Collector of Kistna writes:—

"There are no complaints that this district salt possesses any disagreeable qualities. Nor do people cleanse it for domestic purposes, (save Europeans). No general wilful adulteration is reported on the part of either wholesale or retail dealers; but it is reported, though there are no complaints, that small traders and hawkers mix earth with the salt in order to cover the wastage. I am inclined to think that this must occur very rarely and in quite out-of-the-way villages."

NELLORE.—The Collector of Nellore did not favour the Commission with his own views. The following extract is from the report of the Salt Deputy Collector received under the Collector's endorsement:—

"Complaints are unknown in this district that the quality of the salt supplied under the present system is either bitter, or wants flavour or strength, or is unwholesome, or productive of cutaneous or other diseases, and there is no ground for supposing that the people would prefer or appreciate a better quality of salt. Many of the Tahsildars and Salt Superintendents consulted are of opinion that rather than an improvement in quality, the people would better appreciate a reduction in price, and that they would then probably consume more salt and buy larger quantities. Except among Europeans and Eurasians where the monopoly salt is boiled and refined and converted into what is ordinarily seen and used as table salt, it is not the practice for other classes to re-dissolve or evaporate the monopoly salt before use in order to obtain a purer article.

"Wholesale and retail dealers do adulterate the salt we sell to them before allowing it to pass into consumption, chiefly with sand and salt earth. This is not so common with the petty and local dealers, but it is largely adopted by the lambadis and other bands of traders who come from Hyderabad. They have some notion that it keeps the salt better and prevents wastage, and we are obliged to check a tendency on their part, when they buy heaps wholesale, to dig out three or four inches of the soil where the heap stood and to so injure platform surface."

CHINGLEPUT.—In the Chingleput District also we have to rely on the Deputy Collector's report. It is to the effect that to his knowledge no complaints have been made against monopoly salt* on the ground of its being unwholesome, or productive of cutaneous or other diseases, or wanting in strength. In Ganjam, (where the Deputy Collector has served), he says the Nowpada salt is bitter, but the bitterness is tolerated for the sake of the better crystals. It is not the practice among natives to re-dissolve and purify salt.† In bad weather sometimes some inferior salt is admitted to which layers object, and salt gets rendered impure while waiting for final storage and also in transit when bulk is broken. But the Deputy Collector does not believe that dealers purposely adulterate salt.

SOUTH ARCOT.—The Collector of South Arcot writes as follows:—

"All the Tahsildars from whom reports are received say that no complaints are made of the bitterness, want of flavour, or unwholesomeness of the salt sold under the present system. Mr. Dique, the Tahsildar of Tindivanam, alone of the six who have replied, says that he thinks that of course if better salt could be had it would be preferred, provided the cost is not much more. Complaints by consumers are no doubt rare, but in my opinion there was good ground for complaint in respect of the salt sold at Killai which was light, bad, and dirty. I have heard a purchaser at the pans speak of it contemptuously as 'bran'. The salt made at Gundalan is also very light, but the people of Cuddalore have grown to like it and doubtless with true Indian conservatism prefer it to the Merkanam salt which is a far superior article. It is my opinion that the public generally would certainly prefer and appreciate a better quality of salt than what is now sold. It is only the practice to re-dissolve and boil the monopoly salt among Europeans and East Indians. This is in order to rid it of the dirt which is sold with it and to reduce it to a fine-grained salt. All the six Tahsildars say that salt is not adulterated before sale by the retailers. My own opinion is that it is a little adulterated by the addition of sand, but it is difficult to prove this because generally when sold by Government the salt is not altogether free from dirt."

TANJORE.—The full report of the Collector of Tanjore on this point is reproduced below:—

"The quality of the salt issued from the Government stores in this district is, as a rule, pure, though exhibiting different qualities and appearances both in crystal and colour, some being heavy, some light, some being white, and some brown. The salt produced in the southern divisions of the district is decidedly superior to that manufactured in the northern divisions, and is often remarkable not only for its cleanliness but also for its fine crystals; this is accounted for by the fact that the former draw their supply for salt manufacture direct from the sea, which is not open to the latter, where the article has in consequence to be manufactured from pit brine, in some instances freshened by percolation from the neighbouring paddy fields and fresh water supply channels. Although the salt thus manufactured in the northern divisions of Noidavassal, Tranquebar and Negapatam cannot be said to be anything like so pure and clean as that produced in the southern divisions of Tambika-nallavankottai, Adrampatam, Kattumavadi and Arasanagiri, still its importance as a marketable commodity is not affected thereby, but, on the contrary, it is rather preferred by the wholesale dealers and merchants, who, from buying by weight and selling by measurement, gain by, and therefore like, its lightness.

* The Conjeveram Tahsildar mentions salt from Cuddalore, (earth-salt), as being supposed to cause itch.

† The Chingleput Tahsildar says that Jains and well-to-do people purify salt before use.

"When salt is purchased wholesale by merchants, it is removed from the Government store and secured in their own godowns or heaped up on a levelled piece of ground. In the latter case, it is for the most part covered with earth and opened whenever retail dealers happen to resort to it; this is of course repeated day after day till the supply is exhausted and the salt gets more and more mixed up with sand and earth in proportion to the number of times the heap has been opened and covered again with earth. Another heap is purchased and the same procedure followed, and the retail buyers, chiefly bandymen with return empty carts, purchase the adulterated salt and carry it off to the intended place of sale in bags. The salt thus carried is carelessly handled about in the bazaars or small sheds and again measured out for sale in retail, or left to remain till it is finally disposed of; consequently this frequent changing of hands, in the manner and under the circumstances above described, renders the salt anything but pure when it comes to the consumer.

"I have not received any complaints or heard of any being raised regarding the flavour or bitterness of the salt manufactured in this district nor does local experience and information at my command point to its being considered in any way injurious to the health of the community at large. At the same time, I cannot omit to notice the prejudice against the salt spontaneously produced in the great salt swamp at Vedaraniam, not so much on account of its supposed bitterness and consequent injury to the health of the consumers, but as a bad marketable commodity unable to force its way into the market on first starting, on the same footing as the lighter manufactured salt, solely on account of its weight, which is out of all proportion to its bulk, and which doubtless forms the chief restriction to its more general use, for we are aware of the fact that the merchants buy by weight and sell by measurement. Notwithstanding the prejudice against the spontaneous salt, this article is much preferred for consumption by the people residing in and contiguous to the taluk where it is obtained, (Tritrapundi), who have been for a long period accustomed to its use without any harm to themselves apparently. There is no doubt the general public would appreciate the better quality of this spontaneously produced salt if it could only find its way into the market; and if the special discount of 10 per cent. recommended by the Board be sanctioned, it would hold out an inducement to traders to take this salt. At present spontaneous salt is valued only for exportation by sea as an article that breaks bulk favourably.

"The practice of re-dissolving and evaporating the monopoly salt before use to obtain a purer article for consumption, prevails only amongst the European residents in the district, who invariably convert the bazaar article into a white pure salt before consumption; the rest of the population use the article as purchased, independent of any consideration as to dirt or dust the salt may contain, and this is partly due to the apathy of the people and their ignorance in dealing with the method of re-dissolving the salt, as also to the waste of the article when thus dissolved and reduced by evaporation; moreover it must be borne in mind that, amongst the native population, salt is only used for culinary purposes in a dissolved state, and not as a condiment cold, as prevails amongst the Europeans. Doubtless wholesale dealers are addicted to the practice of adulterating salt before allowing it to pass into consumption; this adulteration chiefly consists of loose sea-sand, earth, and sometimes small sea-shells. Retail dealers also are doubtless addicted to the same practice, but to a more limited extent, as any further glaring adulteration of an article already adulterated would be apparent and tell unfavorably on their sales and result in ultimate loss."

MADURA.—The Collector of Madura is of opinion that the questions put in para. 7 of the Commission's circular may with confidence be answered in the negative, with the qualification that "when a better and a worse kind of salt are obtainable at the same price at the same place, the public choose the better and will not buy the worse." As an instance he cites the following facts:—the north of Madura had, till the opening of the railway, generally taken salt from the pans on the eastern coast of Ramanad. When the railway was opened, however, salt began to come in from Negapatam. This was a blacker salt than the people had been used to, and, a cholera outbreak happening at the same time, they conceived a strong, though probably unfounded, prejudice against the new salt. And when the railway was extended to Tuticorin they took salt thence in preference to salt from Negapatam, though the latter was somewhat cheaper. The Collector infers that the people have their fancies, not that they would be ready to pay much for them.

TINNEVELLY.—The Collector of Tinnevely writes as follows:—

"The quality of the salt manufactured by Government varies slightly at every different pan, but more in respect of weight, to which the dealers, who sell by measure, attach far more importance than it deserves, than in point of saline virtue. It is everywhere remarkably strong, pungent and good, so that with those habituated to English table salt a little of it goes a long way. Its composition is a scientific question into which I do not feel myself competent to enter. There is no fear of finding anything in it except what there is in sea water, but there is

little doubt that the methods of manufacture may be improved, and it is not improbable that at present this is not so well understood but that other salts in small proportion are thrown down in manufacture with the salt of commerce. There is nothing whatever to show that it is in any respect unwholesome. It is never known to have had any malady laid to its charge, but on the contrary, is eagerly sought after as a condiment tending to stimulate the appetite, and purify the stomach, intestines, and blood, by the whole population, both for themselves, their cattle, and in some cases their agricultural produce.

"As retailed by the petty dealer, it is not adulterated otherwise than by the harmless admixture of mud or sand,* and this is rather accidental than of set purpose. It is true that rather strong preferences exist sometimes in favour of one salt when the salt manufactured in two different places compete, but I believe such preference to be due chiefly, on the part of the consumer to habit and the dislike of what is new, and on the part of the dealer, to the relative difference of weight in the two kinds of salt, the purchase by weight and sale by measure making the light salt always advantageous to him. Much of the difference in this respect might be removed by a strict uniformity in the process of manufacture carried down to the minutest details, but I think it probable that some of the difference in system of manufacture is due to difference of latitude and climate, power of the sun, influence of hot winds, and the like, and it would be a mistake to attempt to secure perfect uniformity of the details of manufacture when such conditions are different.

"So far as I know, there are no grounds for believing that there could be supplied a quality of salt which the people would appreciate better, certainly there are none for thinking that the people at the present moment desire anything better. It is nowhere the practice to dissolve and re-evaporate salt."

MALABAR.—The following are the remarks of the Collector of Malabar:—

"Complaints have been made by the consumers only as regards the Tuticorin salt which was introduced into this district in 1874. It is said to be bitter and to possess less flavour or strength. It is supposed by some to be unwholesome and productive of cutaneous disease, but my opinion is that the chief fault which it has, and which renders it unfit for the markets of this coast, is that it is so very deliquescent. This sort of salt has been excluded from the contract for the current year. Bombay salt is liked by the people in general, though a better sort will indeed be acceptable to them.

"The re-dissolving and evaporating of the Government monopoly salt is resorted to by some well-to-do people for preserving limes and for other sorts of pickles, and on occasions of grand feasts or festivals they generally purify it by washing it in water, which, after being itself purified by means of a certain creeper called 'appuvalli,' is utilized again in the preparation of condiments.

"The wholesale or retail dealers are not generally reported to be in the habit of allowing the article to be adulterated at any stage of its transit for consumption. Some officers are however of opinion that retail dealers mix sand with the salt for the sake of profit. The best, average, and worst kind of Bombay salt, as also the Tuticorin species, are mixed by both classes of dealers to facilitate the sale of the inferior salt, especially the Tuticorin, which, offered alone for sale, *i. e.*, unmixed with Bombay salt, is scarcely in demand."

SOUTH CANARA.—The Salt Deputy Collector of South Canara writes as follows:—

"No complaints are made regarding the Bombay, Goa, or Kundapur, (local), salt. Complaints were rife when Cutch salt, (which the Chemical Examiner pronounced to be the best), was imported into the district a few years back, (Fasli 1281, or 1871-72). It was said to be bitter and productive of cutaneous diseases.

"If I remember rightly the same complaints were made when Tinnevely salt was introduced into the district by Mr. W. Fisher, the then Collector, in Faslis 1268, 1269, and 1270, (1858-59, to 1860-61.)

"It is not the practice to re-dissolve and evaporate the monopoly salt before use. It is used by some in its natural state and by others by dissolving it.

"As large quantities of salt are manufactured from saline earth, especially in the northern parts of the Udipi taluk and on our southern frontier, there are instances in which

* Some of Mr. Stuart's Tahsildars, however, mention adulteration with salt-earth.

† The Tahsildars say that an objection is made to Bombay salt as causing itch; but that being stranger it is bought by the poorer classes. They also say that wealthy people and higher castes do re-dissolve and evaporate, and that sand is used for adulteration, one even going so far as to say that one part of sand is added to six parts of salt. They deny that earth-salt is so used.

this article is mixed up with the monopoly salt and sold by the retail dealers, because it can be purchased at a very low rate, from eight annas to one rupee a mura, which is about an Indian maund. I have reason to believe that this illicit salt is also largely mixed up with the Goa salt, imported by private traders on payment of the import duty of Rupee 1-13-0 per Indian maund at the ports of Mangarkatta and Malpe."

SALEM.—The Collector of Salem thus states his views:—

"No complaints have ever been made regarding the quality of the salt now supplied. In fact it is not to be expected, as the local authorities have not the means of rendering any satisfaction to complainants unless the case be one of adulteration which can be taken cognizance of under the Penal Code, or unless the salt sold is so deleterious to public health as to call for a special reference to Government. As regards the former, it is almost next to impossible to bring home the charge of adulterating salt, and as to the latter, I need hardly inform the Commission, that no occasion has arisen to take such an exceptional step.

"The monopoly salt is not stated to be either bitter or unwholesome, but distinction is sometimes drawn between salt supplied from different depôts and comparisons are made as to their respective qualities. In the towns of Salem, Ahtoor, and Utengiri, where Madras salt as well as salt imported from Merkanum and the neighbouring depôts in South Arcot District is used, the latter salt is preferred as being of a stronger flavour and as being more wholesome. But the majority of the people buy the Madras salt as being cheaper, although there is a general impression that it is productive of cutaneous diseases. There is no doubt that every one would prefer a better description of salt than that now available, provided it could be had for the same price.

"I am not aware that the ordinary salt is anywhere re-dissolved and allowed to evaporate or otherwise purified prior to being used. The mass of the population mix it with their food in the state in which it is purchased, but the more refined generally dissolve it in water and use this water for cooking purposes, throwing away the sediment which consists of either sand or dirt.

"Regarding the question of adulteration, it is stated that traders are sometimes in the habit of mixing fine white sand with salt and that others use powdered ashes for the purpose, both the processes tend to increase the apparent quantity of the salt, and the use of ashes is further explained by the fact that they give a darker hue to the salt. This is done to induce ignorant villagers, who, as a rule, prefer blackish salt to one of a whiter colour as being better flavoured, to purchase that exposed in the bazaars for sale. It is also alleged that the admixture of ashes tends to lessen the wastage caused by deliquescence in wet weather."

COIMBATORE.—The Collector of Coimbatore simply states that no complaints have been made by consumers of salt imported, that it is consumed as imported, and not refined, (except by European families), and that it is customary to mix earth-salt to some extent with sea-salt.

NILGIRIS.—The Commissioner of the Nilgiris has heard no complaints of the quality of salt. The practice of re-dissolving and evaporating is unknown, nor is adulteration by traders complained of.

TRICHINOPOLY.—The Collector of Trichinopoly writes:—

"No complaints have been or are made by consumers in this district as to the quality of salt supplied under the present system, except in the Trichinopoly taluk where the people appear to condemn the salt manufactured at Velangani, near Negapatam, as bad. It is said to be of a bitter taste, generally unwholesome, and productive of itch; it is of a dirty colour and has a considerable admixture of clay.

"(a). In Musiri, Kulitallei and Perambalur taluks the people seem to be satisfied with the salt they get. Mr. Wynne, in charge of the Trichinopoly taluk reports that the salt from Adarampatnam and other places is of a white crystalline appearance and is much preferred by the people. The Tahsildar of Udaiyarpalayam and the Deputy Tahsildar of Kilapalur state that the people would prefer a better quality of salt and would wish to purchase it, if it could be had for the value at which the salt at present available in the bazaars is sold.

"(b). Except for medicinal purposes and for special preparation of certain cakes made of black gram, the practice of re-dissolving and evaporating the monopoly salt before consumption in order to obtain a purer article does not exist here.

"(c). Earth-salt is said to be mixed with the Government salt in remote villages in the Trichinopoly taluk. The reports from the other four taluks in the district show that the dealers do not adulterate salt before allowing it to pass into consumption. The Tahsildar of the Udaiyarpalayam taluk reports, however, that it is the opinion of the people that adulteration takes place at salt-pans; but that this opinion is unfounded."

NORTH ARCOT.—The Collector of North Arcot reports that his district is supplied from Madras, Chingleput, Nellore and South Arcot. The Madras salt is had in least esteem, as of a bad colour, but no positive complaints have come to notice. Re-dissolution and evaporation are not practised. Generally there is no adulteration, but in Wallajah the licensed Cuddapah earth-salt is used to mix with Madras salt.

KURNOOL.—The Collector of Karnool simply says that no complaints as to quality appear to have been made, and that adulteration with earth-salt, but not otherwise, is practised.

CUDDAPAH.—The reply of the Collector of Cuddapah is to the same effect. He has not heard of re-evaporation in order to purify.

BELLARY.—The Bellary Collector also agrees, adding that adulteration with earth-salt is common.

II. Earth-salt and spontaneous salt.—This applies to the questions put in part 8 of the Commission's circular, as to earth-salt and spontaneous salt are collected below. One of the questions, viz. as to the use of earth-salt to adulterate monopoly salt has already in many cases been answered by participation in the replies to part 7 already collected. It may be well to state that the phraseology on this subject is somewhat vague, but the term "earth-salt" is generally applied to a comparatively pure salt obtained, as in the Cuddah District, from "earth" by lixiviation and evaporation either by solar or artificial heat. Spontaneous salt is the purer sort of salt deposited by natural evaporation in salt swamps. This, however, is by insensible gradations into "salt-earth," for it would be difficult to say under which head to class the incrustation which is abundant near the Karasa salt-pan in Vizagapatam, and which contains upwards of 50 per cent. of chloride of sodium.

GANJAM.—The Collector of Ganjam reports that no earth-salt is made in his district.

"If natural salt forms, it is collected on account of Government, if the quality is good. If it is bad, it is destroyed on the spot. It is not mixed with monopoly salt." Since 1862, 3393 maunds of natural salt were collected, of which maunds 301 were subsequently destroyed as unfit for consumption.

VIZAGAPATAM.—The following are the remarks of the Collector of Vizagapatam:—

"Notwithstanding the efforts which have been made of late years to suppress the illicit manufacture of salt, it is still apprehended that earth-salt is made to some extent in this district, though salt-earth is more used for human consumption; but whenever the manufacture of earth-salt, or the possession of salt-earth in large quantities, which the High Court have held to be *prima facie* evidence of the intention to manufacture illicit salt, is brought to light, the offenders are dealt with under the provisions of the salt laws.

"The process of manufacturing earth-salt is described as follows:—

"The earth is obtained from swamps and other saline grounds and put into a pot and dissolved in water, and through a small hole made at the bottom of this pot, the saturated brine percolates into another pot placed underneath it. The brine is then taken away and boiled and made into a powderish white salt. This is done clandestinely at night, to prevent detection. The brine water which drops into the lower pot is sometimes used in lieu of salt in articles of diet. It is reported that 3½ ounces of this saturated brine will produce 8½ ounces of salt, i. e., one-fourth of the quantity of brine boiled.

"Another mode of illicit manufacture is stated to be carried on near the sea-shore. Little beds are formed in the vicinity of hollow parts of swamps where the sea-water settles during the monthly high tides, and into these beds this water is conveyed and allowed to evaporate, and salt is then scraped and taken away. This process is described by the Salt Deputy Collector, but it does not appear to be carried on to any large extent.

"Natural salt is found in very small quantities in swamps along the sea-shore. It is formed by the spring tides covering the swamps, and after the water recedes and the ground is exposed to the rays of the sun. It is as a rule destroyed by the Salt Department, and by the guard patrolling the swamps. During the year a small quantity (1½ seers) of natural salt was collected by some of the villagers, and was immediately discovered and seized by the police.

"The extent to which earth-salt is made cannot be stated with any degree of accuracy owing to the surreptitiousness of the manufacture, but there is every reason to believe that it is not made to any great extent." The localities in which it is supposed to be made appear to be situated within a range of 40 miles from the sea coast.

* Yet during the last year 4,500 maunds of salt earth were seized by the police, and the salt-earth of Vizagapatam contains at least 50 per cent. of chloride of sodium.

"I take the opportunity to remark that the fishermen possess large quantities of this salt-earth on plea of curing fish. Government, with a view to give an impetus to the fishermen's trade, have ordered salt to be sold at prime cost to fish-curers *bond fide* for the curing of fish; up to date no trader has availed himself of the privilege and the old practice of using salt earth is still prevalent. The use of this material by the fishermen themselves is not forbidden. Instructions however have been issued that the possession of large stores thereof would be held *prima facie* evidence of intention to sell the same and thereby defraud the salt revenue."

The Salt Deputy Collector gives the following statement of the swamps in which salt-earth and swamp salt is found and the guard entertained for watching them. Natural salt is found in very small quantities in them, in places where a depression in the ground retains sea-water after a high tide. The swamps are guarded by the police for about 9 months in the year, the guard being removed after the rains have fairly set in.

Description of Swamps.					Extent.		Strength of Police guard.	Cost of guard.
					Length.	Breadth.		
Nalabpetta	...	...	...	...	M. 21	M. 1	26	Rs. 317 (per mensem, seeing-ly.)
Karasa	...	...	...	...	3	2		
Nellamukku	...	...	...	...	2	1		
Chepurullilly	...	...	...	...	2	2		
Pudemacuka	...	...	...	...	3	1½		
Varada	...	...	...	...	5	2		
Chendavada	...	...	...	...	4	1½		
Pentacotta	...	...	...	...	3	2		

During the year 9,549 maunds of earth-salt were seized by the police. The Karasa and Chepurullilly swamps seem the most troublesome to guard, the neighbouring villagers making set roads upon them, and carrying off the salt-earth in carts.

GODAVERY.—No swamp salt is collected in the Godavery District. In three taluks earth-salt is made by the lixiviation and evaporation, by sun's heat, of salt-earth, though the practice is known to be illegal.

KRISHNA.—In Krishna spontaneous salt is trodden down by coolies or cattle or flooded by fresh water. The saline earth here used by the fishermen to cure fish is said to be boiled down and to result in "a black substance with a salt taste." The Collector seems to regard the salt of Pundraka as "manufactured." It is generally spoken of as spontaneous. It is collected in large quantities on behalf of Government.

NELLORE.—The Salt Deputy Collector of Nellore writes:—

"Earth-salt is neither made, nor is natural salt collected in this district. In positions where spontaneous or swamp salt generates, chiefly on the shores and among the islands of the Pottent Lake, it is not unusual for it to be smuggled and mixed with monopoly salt, and sometimes even to be used by itself unadmixed with anything. But cases of this kind are not common, and are kept down at a minimum in the locality specified by preventive works and a special guarding establishment, and elsewhere all along the coast wherever such salt forms in the tidal estuaries and arms of the sea, by vigilance generally on the part of the salt and sea-customs servants of the district."

CHINGLEPUT.—The Salt Deputy Collector of Chingleput reports that no earth-salt is made and no spontaneous salt collected in the limits of his charge. But the Tahsildars of Chingleput and Madurantakam expressly mention the manufacture of earth-salt, and the Ponneri Tahsildar declares that spontaneous salt is clandestinely collected in seaboard villages.

SOUTH ARCOT.—The Collector of South Arcot forwards the following memorandum by his Salt Deputy Collector:—

"Earth-salt is manufactured I believe extensively throughout the district by lixiviating earth impregnated with salt, which is gathered under various pretences, for washing clothes, for manuring coconut trees, and the like. The earth is put into a pot and water poured on it, which filters through the earth, and carrying the salt with it passes through a small hole in the bottom of the pot into another pot placed under that pot. A liquor resembling sea-water, but more saturated, is thus obtained, which is treated with either solar or artificial heat according to circumstances until the aqueous portion evaporates leaving a pure salt far surpassing in whiteness, if not in chemical purity, the salt sold at the Government stores. The salt is chiefly

manufactured for home consumption, but when the facilities are great, large quantities are manufactured and sold at the extraordinarily reduced rate of 8 pie (*pie*) per Madras measure. I am not aware that the salt is used to mix with our monopoly salt, being small grained it falls into the vacuities with no profit to the illicit traders. There are no facilities for collecting natural salt in this district:—

and records himself the remarks below:—

“Earth-salt is made all over the district more or less, but natural salt, though it forms in some places on the coast, is not collected by the people, as it is destroyed by the police as soon as its existence is known. It is impossible to say to what extent earth-salt is made. It is not used to mix with monopoly salt, nor is natural salt. Earth-salt is manufactured from salt earth called ‘uppi man’ by placing a quantity of the earth in a chatty, and mixing it with water and thus dissolving the salt. A small hole is made at the bottom of the chatty which is stuffed with a rag and thus acts as a filter to keep back the earthy particles. The brine is then boiled or evaporated.”

TANJORE.—The Collector of Tanjore writes thus:—

“No earth-salt is manufactured in this district, except illicitly for domestic consumption by the poorer classes in out-of-the-way localities. The process of making earth-salt is as follows:—

“The salt-earth is mixed with water. The mixture is then strained to get rid of the earth, and the salt water thus obtained evaporated by boiling. Sea-water is sometimes treated in the same manner.

“The collection of natural salt is undertaken in the great salt swamps at Vadaraniem, if the season permits, and is known by the name of spontaneous salt. The extent of collection depends almost entirely upon the state of the season, any sudden fall of rain being sufficient to destroy the crop for the whole year, so that the supply, though most extensive, and limited, in fact, only by the means of collection, is precarious and not to be depended upon for constancy. The process of production and collection is as follows: the low swampy ground near Vadaraniem known as the great salt swamp is annually inundated by the sea at the first burst of the south-west monsoon, generally about the end of the month of May. This is caused by a strong westerly wind, known as ‘*Vishagam*’ by the natives, raising the sea-water a few feet above the level of the ground and spreading it over the swamp, which is about 20 miles long by one or two broad.

“The deposit of water thus left, after the surplus quantity has been drained into the east sea, through sluices provided for this purpose, evaporates into a good hard clear bed of salt crystals, ready for picking about the beginning of July. Then begins the work of collection, a very unpopular duty, as the sharp crystals cut the hands and feet of the coolies, and, if the weather is fair, with the available labour, from one to two thousand gree may be collected on the high ground contiguous and up to which the canal has now been extended, and the salt thus spontaneously produced at once removed to Negapatam in boats. Neither earth-salt or natural salt is known to mix with monopoly salt. It is under consideration to run lines of rail into this swamp so as both to economize the cost of collection and make the available labour go further, and it is dangerous to calculate how many fold may be multiplied thereby the amount that can be collected within the limited time available; perhaps tenfold at first and hundredfold hereafter.”

MADURA.—The Collector of Madura states that it is believed that earth-salt is largely manufactured in the district and used by the poorer class, both by itself and mixed with monopoly salt. It is also used for fish-curing along the coast. The chief seats of manufacture are the Sivaganga and Ramnad zemindaries, the divisions of Tirayadanasi, Tirupatur, Sivaganga, and Mudukolattar and the taluk of Melur. The description of the mode of manufacture agrees exactly with that given by the Collector of South Arcot. Recourse is generally had to solar evaporation, the beds being formed by clay walls on level rock. Evaporation is rapid and a thin layer of crystals soon formed. The Tahsildar of Melur had seen “a large number of these beds in different villages.” The makers are generally Valayars or Kuliars, and by their behaviour shew they know their occupation to be unlawful. The Collector can form no estimate of the quantity of salt thus made: but believes it considerable. He is assured that native physicians prescribe monopoly salt to their poorer patients as an article of diet, which they would not do if the poorer classes used it habitually.

Spontaneous or natural salt is collected both on behalf of Government and illicitly. To what extent illicitly, the Collector cannot say, but the matter has led to murderous affrays between smugglers and the police. Natural salt, (or rock salt), is said also to crop up along the banks of a small stream in the Melur taluk. There are four chief salt swamps in the district,

and the salt collected from them on behalf of Government during the last 5 years is shown in the annexed table:—

Swamps.	SALT COLLECTED IN									
	1871-72.		1872-73.		1873-74.		1874-75.		1875-76.	
	Mds.	S.	Mds.	S.	Mds.	S.	Mds.	S.	Mds.	S.
Panchakali Taruvai ..	163	..	494	30	599	..	315	..	10	30
Kalimangundu Taruvai ..	..	..	..	..	..	..	22,263	..	10,457	..
Pombari do ..	..	..	..	..	23	..	..	..	..	..
Naripyur do ..	4,074	..	..	..	..	..	..	..	..	..
Total ..	4,237	..	494	30	622	..	22,578	..	10,467	30

There are some other small swamps where either the formation of salt is prevented by drainage or the salt destroyed when formed. The natural salt is disliked by traders on account of its weight, but was declared a pure salt by Dr. Rattron. The Collector therefore finds some difficulty in understanding the double statement of the Head Assistant that the salt was sold in large quantities in the Ramnad bazaar, but that it had the reputation of causing diarrhoea. The Collector infers that this must be a mere fancy. Further enquiry showed the salt to come from the Government stores of spontaneous salt. It is to be noted that saltpetre* to an estimated quantity of 5,000 maunds is manufactured in the district and edible salt is yielded by this process.

TINNEVELLY.—In Tinnevelly the reports of Tahsildars show that there is a small production of earth-salt by lixiviation of saline earth and also a manufacture of saltpetre.

Along the coast also spontaneous salt is said to be collected by the poor in some quantity.

MALABAR.—In Malabar the practice of making earth-salt has, owing to the doubtful state of the law, reached a dangerous height. The following are extracts from the Collector's letter:—

“The localities of earth-salt pans in this district are named in the margin. They are situated in the taluks of Ponnany, Ernad, Calicut, Cottaayam, and Cherakal, it being abundant in the first and last mentioned taluks where the operations are carried on on a pretty large scale on account of their peculiar facilities for the purpose; but it is hardly possible to give even an approximate estimate of the amount of salt produced, in the absence of any statistics connected with the manufacture. I may mention,

however, that recent inquiries made by me in the course of the jamabandi settlement of the Ponnany taluk have convinced me that not less than 400 acres are, at one time or another, in use for this purpose. An acre produces from 60 to 80 MacLeod seers† of earth-salt per day, so that in a month at least 720,000 seers, and in the season of, say four months, 2,880,000 seers would be produced from 400 acres, but as above said the whole of this area is not under cultivation all at once, and it is impossible to give any mean approximation to the out-turn. The cultivation of salt for domestic use is perfectly legal in this district. The greater portion of what is produced is however not used for domestic purposes, but is sold, and the sales of this salt have greatly increased of recent years and since the decision of the High Court that a man cannot be convicted for merely manufacturing salt, so much so that the sales of Government salt have been very materially affected thereby. It is sold by itself, and also to some extent mixed with monopoly salt. Natural or spontaneous salt is nowhere collected in this district.”

The process of manufacturing earth-salt is generally conducted by Moplahs and low caste people, viz., Vettuvans, &c.

The mode of manufacture is thus described, seemingly from the Collector's own observation of pans at Chetwai in the Ponnany taluk:—

“A low-lying level space is selected near a tidal river, and it requires from one-fifth to one-fourth of an acre for each two manufacturers. Two Moplahs we found were working 940 square yards or something over one-fifth of an acre, (4,840 square yards = 1 acre.) This space was occupied by fourteen madas and four kalams. Each mada with its heap of refuse and its

* A separate circular was afterwards issued to certain districts on the subject of saltpetre manufacture and the edible salt produced in the process. The result of the reference will be shown elsewhere.

† 1 MacLeod seer = 130 tolahe.

madathalam occupied about 2 or, say, $2\frac{1}{2}$ square yards, and the four kalams occupied each about 10 or 12 square yards; so that—

	Sq. Yds.
The whole space being ...	940
and the madas occupying ...	$14 \times 2\frac{1}{2} = 35$
and the kalams do ...	$4 \times 12 = 48$
—	83

there remained about ... 857 square yards, (including however embankments), from which the men collected, (by scraping), surface salt-earth, (called *marigaman*). This earth must be nearly pure sand, so that water when mixed with it will drain easily through it, and the earth is prepared daily by being sprinkled with salt water from the river which at the time of our visit registered 3° Beaumé. After this earth has been used in the mada, it is heaped at the side and then distributed over the surface of the manufacturing site in a thin layer. The mada, in shape like a small lime-kib, is formed with clay on the outside, and with a hole, (called *madakannu*), and rivulet at one side for the passage of the brine from the mada to the madathalam. This madathalam is a shallow basin formed of moist plastic clay beneath the surface of the ground and capable of holding a gallon or a gallon and a half or more of brine. The mada, *madakannu*, and madathalam being ready, the end of a coconut frond is placed at the bottom of the mada with its point projecting into the *madakannu*; the rest of the hole is blocked up with a small wisp of straw, and thus prepared there is a very simple and most effective means of draining off the brine from the mixture put into the mada. The mada itself is about 2½ feet in diameter and about 1 foot or $1\frac{1}{2}$ feet deep, and the madathalam is about 1½ feet in diameter. Having placed a sufficient quantity of the salt earth in the mada and mixed it well with salt water, the brine is allowed to drain off into the madathalam. The brine is called *oranna*, (or briefly *ora*), *vellum*.

"To convert this brine into salt, a number of very shallow pans are prepared of moist plastic clay; a collection, (generally 20 in number), of these pans is called a *kalam* and each pan is called a *kanni*. Each *kanni* is on the average rather over half a square yard in extent divided from its neighbour by a ridge, (*varambu*), about an inch or an inch and a half high. The contents (brine) of the madathalam are transferred to these *kanais*; five, six, or seven of them can be filled from one madathalam. After the salt crystals are formed they are raked together by means of the *vala* or scraper made of bamboo entirely or with the broad base piece of iron; the base piece is made broad enough to lift the salt with. It is a flat instrument with the sides about six inches in length. The liquor left after the deposit of the crystals is called '*ked oranna vellum*,' or briefly '*ked ora vellum*.' This is removed from the pans and deposited in a shallow basin close to the *kalam* and similar to the madathalam only somewhat larger, and this liquor is showered by hand over the crystallising pans after the brine has been transferred to them. The thick unctuous coppery-colored mud left in the crystallising pans after the removal of the *ked ora vellum* is carefully removed and thrown away.

"The time occupied in the processes is as follows:—The salt-earth and water are mixed in the mada at daylight. The brine is ready in the madathalam by 9 or 10 A. M., and varies in density from 14° to 23° Beaumé; the result of 15 observations, giving a mean of $18^{\circ} 30'$. It is immediately transferred to the crystallising pans and the salt is scraped up at about 4 P. M. The liquor remaining after the salt had been taken gave a mean of $29^{\circ} 05'$ Beaumé as the result of 10 observations ranging from 29° to $31^{\circ} 5'$ Beaumé. The two Moplahs above alluded to had rather more than a fifth of an acre; they worked 14 madas between them but two men can manage as many as 20 madas, and they had 4 kalams containing exactly 100 *kanais* of various sizes. The daily produce was said to be about 50 *najia*, or 12½ *Maclod** seers; the land belonged to C. Ukoma Pillai of Guruvayur, to whom the two Moplahs pay as rent 8 *najia* or 2 *Maclod* seers per day for every working day. The produce varies with the weather and is frequently in excess of the above. The salt produced was very white, but in small friable crystals and very light. One and a half measures of it go just about as far as one measure of Bombay salt.

* This rate gives something over 4½ *Maclod* seers per acre per day.

"The salt thus produced sells at four annas a maund in the bazars. Its sale is illegal."

SOUTH CANARA.—The Salt Deputy Collector of South Canara writes thus:—

"No natural or spontaneous salt is produced in the district; but, as stated above, large quantities of salt are made from saline earth, which is so largely found on the banks of our numerous backwaters, especially on the banks of the Kaval river, which is our southern boundary, and on the banks of the northern arm of the Bangakatta river in the Udipi taluk.

"The process of manufacture is as follows:—

"The saline earth is collected by scraping it up with a coconut shell or *mataoty*. A mound or hillock of earth varying from 1½ to 3 feet in height, and from 3 to 6 feet in diameter at the base, is raised on the bank of the river, with a cavity in the centre at the top. This

cavity is in some instances lined with a coating of black clay obtained from the bed of the river, in others a layer of sea-weed is placed at the bottom of it. The saline earth is filled in, and heaped on this cavity, and a quantity of (brackish) water from the river is poured over it and stirred. At the bottom of the mound or hillock a small opening is made with a stick, and through this opening the water escapes into a pit which is dug at the base of the mound. This pit is also lined with black clay, where the soil may be porous. As a matter of course, the water in the pit is much impregnated with salt. The water is next carried from the pit in earthen vessels and poured into small, roughly made beds, varying from 15 to 25 inches in size. These beds are smeared over with a thin coating of black clay, to prevent percolation of the brine, and are separated from each other by a small ridge of the same material, about $\frac{2}{3}$ or $\frac{3}{4}$ of an inch in height. The depth of brine let into the beds is about $\frac{1}{4}$ or $\frac{1}{2}$ of an inch. Within a few hours a layer of salt is formed in the beds, which is carefully scraped up with a knife or thin bamboo lath. The beds are sometimes formed contiguous to the hillock and pit, and sometimes at a short distance from them; the hard level bed of a paddy field is preferred, as being more exposed to the sun's rays. If the beds are carefully prepared and the scraping up of the salt carefully conducted, the salt is clean, but it is generally mixed up with the clay forming the flooring of the beds, and is consequently dirty and of a dark colour. The grains are also very small and friable.

"Saline earth is extensively used for the curing of fish by fishermen, and also for culinary purposes, both by them and other poorer classes by merely dissolving it."

SALEM.—In Salem salt is yielded by the saltpetre manufacture, but the quantity is said to be small and the salt does not pass into the market, though it may be used by the workmen in the works.

COIMBATORE.—And the same may be said as to Coimbatore.

TRICHINOPOLY.—The Collector of Trichinopoly writes as follows:—

"Natural salt is not collected here.

"(a). In the outlying parts, more especially in the villages to the south of the Trichinopoly taluk, adjoining the Pudukottai territory, earth-salt is illicitly manufactured in considerable quantities. The earth-salt manufactured in the Pudukottai territory* is also extensively smuggled into the Trichinopoly taluk. Earth-salt is also extensively manufactured in the north of the Musiri taluk; the Tahsildar reports that all the laboring classes in many of the villages in the north-east of that taluk use no salt but this illicitly manufactured article. He estimates the amount of earth-salt consumed at one-twentieth of the total consumption of the taluk. This of course is a mere guess. Very little earth-salt is made in the Kulitalai taluk. The Tahsildar of Perambalur reports that earth-salt was formerly manufactured on an extensive scale in his taluk; but, owing to criminal prosecutions instituted, the illicit manufacture is considerably reduced. The Udaiyarpalayam Tahsildar states that the earth-salt is not publicly used by the people from fear of criminal prosecution, and that there is reason to believe that this article is manufactured in about 160 villages, some of which border on the Vellar river while the rest contain soda-soil. He believes further that three-fourths of the population of these 160 villages, who would otherwise consume some fifteen or sixteen thousand rupees' worth of Government salt, use earth-salt instead.

"(b). Earth-salt is said to be mixed with Government salt in certain portions of the Trichinopoly taluk.

"(c). The process of manufacture is also as follows:

"The salt earth is collected and put into pots and dissolved in water, the water is then strained off and is either boiled till the salt only remains or else poured on flat stones or hard stony ground and left till the moisture is evaporated by the sun. The Tahsildar of Udaiyarpalayam states that 4 measures of salt-earth dissolved into 8 measures of water produce, on being filtered and afterwards boiled, one and a half measures of earth-salt. The Musiri Tahsildar states that earth-salt manufactured is much whiter than sea-salt, and that it is considered not to be wholesome, at all events if used by those who are not accustomed to it.

"(d). Mr. Wynne states that in his opinion 'the prosecutions for the manufacture of "earth-salt which are so common involve a great deal of hardship. Very frequently it is "a simple inability to procure salt at all which drives the people to illicit manufacture "to procure this necessary. In some of the poorer villages, of which there are so many in the "localities where earth-salt is made, there are no vendors of salt and the distances to be traversed "before monopoly salt can be procured are so great as not only to cause great inconvenience, but "to add greatly to the monopoly price already so high; a very serious consideration to communities so poor.

"(e). The Tahsildar of Udaiyarpalayam reports that the price of the Government salt was lately raised, and adding thereto the cart-hire and the profits of the dealers, the quan-

* It is believed that Pudukottai earth-salt is imported into Madras and Tanjore likewise. A correspondence on the subject is now (14th June 1876) going on.

tity available in the villages for a rupee is less than the quantity obtained at salt pans by 2 or 2½ Madras measures; the villagers find it difficult to purchase this costly article and manufacture and use earth-salt; the prosecutions instituted and punishments awarded have not, in his opinion, checked the illicit manufacture; he thinks that if the price of Government salt is reduced the necessity for manufacturing earth-salt would be obviated."

The extensive use of earth-salt in Trichinopoly was also brought to the notice of the Commission by the authorities of the Great Southern of India Railway. In March 1870 the Assistant Traffic Manager at Trichinopoly pointed to the great decrease in salt traffic, which he attributed to the dry weather enabling the inhabitants to resume the illicit manufacture of earth-salt, stopped for a time by the rains. The then Collector admitted the prevalence of the practice and the police being roused, extensive seizures were at the time made. But again in March 1875 the Traffic Manager drew attention to the subject, and Mr. Pennington, who was at the time Collector, issued stringent orders to his divisional officers and heads of police, to hold heads of villages responsible for unreported manufacture and to harass the offenders by constant prosecutions. The prosecutions in Trichinopoly for illicit manufacture shew an increase, having risen from 57 in 1871 to 155 in 1875. The following figures are extracted from the Traffic Returns of the Railway and to some extent support the contention of the Traffic Manager.

Salt received in Trichinopoly district by rail in the quarter October to December 1872 (the amount from Tanjore, i.e., Nega- patam, cannot be shewn separately in this quarter, but judging from subse- quent returns it must have been nearly the whole supply)				Tons.
				1638.49

Salt received from Tanjore district in Trichi- nopoly for quarter Jan. to March 1873 ...					456.38
Do	do	do	do	do April to June 1873 ...	572.58
Do	do	do	do	do July to Sept. 1873 ...	1298.06
Do	do	do	do	do Oct. to Dec. 1873 ...	1370.57
Do	do	do	do	do Jan. to March 1874 ...	869.23
Do	do	do	do	do April to June 1874 ...	951.80
Do	do	do	do	do July to Sept. 1874 ...	1326.91
Do	do	do	do	do Oct. to Dec. 1874 ...	1519.17
Do	do	do	do	do Jan. to March 1875 ...	1052.67
Do	do	do	do	do April to June 1875 ...	1109.48
Do	do	do	do	do July to Sept. 1875 ...	1306.33
Do	do	do	do	do Oct. to Dec. 1875 ...	1150.39

It is to be noted, however, that the salt sent from Nega-patam to Trichinopoly in the half year ending June 1872 exceeded that sent in the following half year.

The total traffic from Tanjore to Trichinopoly was		Tons.
in 1872 ...		6333
in 1873 ...		8697.59
in 1874 ...		8007.11
in 1875 ...		4618.86

The great falling off in 1873 was due to deficiency of salt in the Government stores, and in 1874 and 1875 the distribution of the traffic on the four quarters tends to become more equable.

NILGIRIS AND NORTH ARCOT.—No earth-salt is said to be made in the Nilgiris or North Arcot.

KURNUL, CUDDAPOH, BELLARY.—In the Ceded Districts the manufacture of earth-salt has reached such dimensions as to make the question how to deal with it one of great importance. The subject has therefore been fully treated in a separate section of the report and the information obtained from Collectors whether in reply to the Circular of 28th January, or otherwise is there embodied. Their answers are therefore omitted here.

III. Wholesale prices.—Para. 9 of the circular called for information as to wholesale marts and the prices there prevailing.

GANJAM.—The Collector of Ganjam reports that no wholesale marts exist.

VIZAGAPATAM.—The Collector of Vizagapatam reports as follows:—

"The only large centres of wholesale salt trade exist in the northern taluka—Gunupur, Parvatipur and Salur—where salt is sold to brinjaries and others trading with places

beyond the Ghauts, Chhattisgarh, Raipur, Katnapur, Bustar, Karondh and the Jeypore country. A statement showing the places where the centres of trade exist, and the average wholesale prices obtaining at each is annexed:—

Taluka.	Places.	Prices.
Gunupur	Gunupur Chillakarla Utkamba Banani Godsary	A bag of 2 Candies sell at Rs. 6-8.
Parvatipur	Parvatipur Kottavalva Sivini Venkampetta Mrityanjayanagram	A palla of 2 Candies, weighing about 5,120 tolahs each, sells at from 7 Rupees (the cheapest rate), to Rupees 8; (the dearest rate).
Salur	Salur Pachipenta Tonaum Kottakki	Newpada salt sells at 9 Rupees per bag containing about 10,400 tolahs. Other kinds of salt, 8½ Rupees per bag of salt.

"These are the principal places where salt is sold wholesale; but it will be well to mention here some other places where a good trade in salt exists. These are:

Narsipatam.	... (Golgonda Taluk.)
Chodavaram.	} (Viravilli Taluk.)
Madgol.	
Devarapalli.	
Vaddandi.	} (Srungavarapukota Taluk.)
Srungavarapukota Taluk.	
Kasipatnam.	
Vizianagram.	
Gajapatnam,	
and Bobbili.	

"The average price obtaining is 15 seers per Rupee."

In a subsequent letter he adds the following names of places in the Rayagadah Taluk:—

1. Cheikallu.	5. Dodabada.
2. Jumidipita.	6. Singhapuram.
3. Rayagadah.	7. Gudichesikallu.
4. Komethapeta.	8. Majiguda.

At these places salt is sold wholesale by bags of 140 seers of 80 tolahs. The prices are

at places 1 and 2	... Rs. 9 per bag.
place 3	... " 9½ " "
place 4	... " 9½ " "
places 5 and 8	... " 10½ " "

GODAVERY.—The Collector of Godavery forwards a list showing the large centres of wholesale salt trade, with the average wholesale prices noted against each centre, and remarks as follows:—

"One large depôt has been recently opened at Dummagudem by Messrs. Pernon and Bowden, European Merchants, who obtain salt from Penuguduru on the credit system, and sell it there wholesale to brinjaries and other hill tribes. The depôt in question has afforded great facilities for the people there. Salt is being supplied from it to the Central Provinces also. This measure will no doubt gradually reduce the high prices of salt now prevailing in those parts. The Ellore taluk and Tuni division in this district, receive also some supply of salt from the neighbouring salt stations of Manginapudi and Pentakota, in Kistna and Vizagapatam Districts respectively."

The list follows:—

Taluk.	Centres or Godowns where salt is stored and sold wholesale.	Average wholesale prices per Indian maund.
1. Rameschendrapur ...	1. Dwarapudy.	RS. A.
	2. Anapavay.	
	3. Tapeswaram.	
	4. Artamur.	2 8
	5. Mandapeta.	
	6. Angura.	
2. Anjalapur ...	1. Jagannathagudi.	
	2. Kottapetta.	
	3. Amalapur.	
	4. Totaramudy.	
	5. Gopalapuram.	2 8
	6. Ganavaram.	
3. Bajahmudry ...	7. Rali.	
	8. Vadapalem.	
4. Paddapur ...	1. Bajahmudry.	2 4½
	2. Dowieswaram.	
5. Nursapur ...	1. Paddapur.	2 5½
	2. Paleole.	2 5½
6. Tanuku ...	1. Nursapur.	
	2. Attu.	
	3. Penugondah.	2 13½
7. Vernagudem ...	1. Betangi.	
	2. Tallapudy.	
	3. Chagulla.	2 8
	4. Tadepalligudem.	
8. Ellore ...	1. Lakkavaram.	
	2. Ellore.	2 8
	3. Poola.	
9. Bhadrachalam ...	1. Bhimadole.	
	2. Dampugudem.	
	3. Bhadrachalam.	2 10½

KISTNA.—The only wholesale mart in the Kistna District is said to be Jagiyapet, where the Manginapudi and Nizammatnam salt is sold at Rs. 300 per garee.

NELLORE.—In this district there are said to be no wholesale marts, a fact which the Deputy Collector thus explains:—

"Even in this very town, the chief of the district, there is no salt stored up anywhere and through the length and breadth of the district it would be difficult to find any place where over 20 or 30 maunds of salt are kept for the purpose of trade. There are probably two reasons for this, first, the perishable nature of the article, and the risk and loss attendant on keeping it for any length of time, and second, the distance from the furthest village in the interior to the nearest salt station is not over 60 miles, so that a trip to and back is not a matter of any considerable time and can be performed in 5 or 6 days from the period of leaving home. Some bandies carry as much as 12 or 14 Indian maunds, and three or four men of one village sometimes club together and bring their bandies for salt. They buy, but on the return journey, part is sold here and part there, so that probably very little more than one bandy-load gets back to the place the bandies set out from, and even in that place the quantity that does thus reach there, is not stored and sold by one man, but is divided among 3 or 4 of the principal bazar-men who retail it in small quantities daily to the people."

CHINGLEPUT.—The report of the Collector of Chingleput is not very clear as to the existence of wholesale marts. Probably the Government collieries constitute the wholesale marts of the Chingleput District.

SOUTH ARCOT AND TANJORE.—In South Arcot there are said to be no wholesale marts, and it may be gathered from the Collector's report that the same is the case in Tanjore.†

* The Tahsildars, however, mention wholesale trade as existing at Periacoppur, Chidambathoor and Conjevaram, the price being at the two first Rs. 9-1-0, at the last Rs. 9-1-3 a maund.

† The Negapatam Tahsildar, however, names Trivellore as a wholesale mart.

MADURA.—The wholesale marts in Madura are, in the north Amanaiyanaikanur, Dindigul and Batlagunda. The two first are stations on the railway from Tuticorin. There is now keen competition since the railway opened and prices are kept down and equalised. Tuticorin salt at Dindigul now sells wholesale 2-5-6 a maund of 22 Madras measures. In the Madura taluk wholesale trade dates from the opening of the railway. The rest of the district is supplied by small transactions direct with the pans.

TINNEVELLY.—There are said to be no large centres of wholesale trade in Tinnevely, the salt being distributed direct in carts, on pack bullocks or by head loads. But, since the railway has been extended, depôts are said to have been opened at Tinnevely, Sattoor, Virdupetty, and other railway stations.

MALABAR.—The subjoined is a list of the large centres of wholesale salt trade existing in the Malabar District, showing the average wholesale prices at each for various kinds of salt sold:—

Name of large Centres.	AVERAGE WHOLESALE PRICE OF SALT.			
	Bombay.	Tuticorin.	Mixture of Tuticorin and Bombay.	Madras.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
<i>Palghat Taluk.</i>				
Palghat bazaar ...	2 9 0	2 2 0	2 5 0	2 6 0
Padunagaram bazaar ...				
<i>Malabar Taluk.</i>				
Atapara ...	2 8 10	2 7 0	.....	.....
Kottapalam ...				
<i>Kurumbremal Taluk.</i>				
adagara ...	2 6 0	.....	.....	.....
Quilandy ...	3 2 10	3 2 10	3 2 10	.....
Nadapuram ...	2 12 0	.....	.....	.....

SOUTH CANARA.—In South Canara there are no large centres of wholesale trade.

SALEM.—The Collector of Salem writes thus:—

"There are no centres of wholesale salt trade worth speaking of in this district. The whole supply is received either from Madras or from the stations marginally noted in the South Arcot District, as will be described more in detail under the following head. Messrs. Arbuthnot & Co. and Cammiade, Martin and Co. of Madras have established Salt depôts at almost all the railway stations and have employed writers to sell for cash salt at each station. The price varies with the distance of the station from Madras, and that at Soorunangulum, (a village 34 miles from Salem and where the Railway Station is located), is Rs. 4-13-0, for a bag of two maunds, containing on an average about 48½ Madras measures. Madras salt is also imported by native merchants and is sold in the retail bazars at 9½ measures per Rupee. The Markanam salt brought in carts is sold retail at 7 measures a Rupee."

COIMBATORE.—In Coimbatore it is said that there are large salt godowns or warehouses at Coimbatore, Erode and Tirooppoor; price varies from Rs. 5-0-0 to Rs. 4-14-0 per bag of fifty measures.

NILGIRIS.—In the Nilgiris there are no wholesale salt marts.

TRICHINOPOLY.—In the Trichinopoly District the town of the same name seems to be the only wholesale mart. A bag containing 31 or 32 measures is there sold for Rs. 2-12-0.

NORTH ARCOT.—The Collector of North Arcot writes:—

"The principal inland centres of wholesale salt-trade are Vellore, Wallajah, Chittoor and Gudiattam. The wholesale price obtaining in these localities is about 9 measures of salt per Rupee, while the retail price is about 8 measures. The Tripati, Arcot, Vellore, Gudiattam, Mailpatti and Amboor Railway stations are also centres of wholesale trade."

KURNOOL.—The Collector of Kurnool has not noticed the point.

CUDDAPAH.—The Collector of Cuddapah reports that no wholesale centres of salt trade exist in his district.

BELLARY.—The Bellary Collector writes:—

"There is no wholesale trade in salt except it be at the large Railway stations where the salt is obtained from Madras, and even there it is sold in bags of from 72 to 73 seers at Rupees 5-3-0 to 5-8-0 per bag."

IV. *Distribution.* (Para. 10 of Circular).—Several Collectors have answered by sending maps. These we have not been able to reproduce.

GANJAM.—The Collector of Ganjam sends a map, of which the following is an analysis:—

A long coast road runs from Chicacole to Rumbah passing close to the several salt works. On this road the chief marts, (it is to be remembered that the Collector has said there are no wholesale centres), are Chicacole, Narasannapettah, Palasa, Ichapur, Berhampore, Chatterpore and Rumbah. Branch roads diverge to the ports, e. g., Culinapatam, Poondy, Surla and Ganjam. At Chicacole the Woomeravilly and Kuppili (Vizagapatam) salts meet. Woomeravilly supplies Narasannapettah. Nowpada supplies Palasa and Ichapur, where sales are stopped owing to the enhanced price. Yet Ichapur salt, curiously enough, re-appears at Berhampore, along with Nowpada salt. Ganjam supplies Chatterpore and Rumbah. Southward there appears a network of roads, issuing in two routes to the Vizagapatam marts. In this southern quarter of the Ganjam district we have the marts of Mandady (supplied by Woomeravilly), Haramandalam (Woomeravilly and Nowpada), Kinedy (Nowpada), Batilly (Woomeravilly and Nowpada). Northwards three routes from Ichapur, Berhampore and Ganjam converge at Aska, whence again they bifurcate (a) to the Tributary Mahals of Orissa, (b) to Sumbulpore. The Ganjam district marts in this quarter are Digoopody, Sooradah (Ganjam and Nowpada salt), Aska (Narasannapettah), Purushottampur, (Ganjam) Belaghatta, Russellecondah, Kolada (where Ganjam and Ichapur meet) and, the furthest, Udaygiri where Nowpada salt alone appears.

VIZAGAPATAM.—The Collector of Vizagapatam writes as follows:—

"I annex the names of the principal lines of salt traffic."

1. * Nowpada to Ganupur and the other places in the taluk.
2. Nowpada, through Palkonda, Parvatipur, (including other places in these Rayaghada, Singapur, and Nowrangpur, to the Central Provinces.
3. Nowpada to Palkonda, and Salur.
4. * Oomaravilli to Palkonda, and from thence to Parvatipur, and Salur.
5. Konada to Vizianagram, Gajapatinagram, and Salur, Tonaum, Pachipenta, and Kottakki; also to Bobbili.
6. Kuppili to Chikkapalem, Chipurpili, Rambhadrapur and Salur; also to Bobbili.
7. Binalipatam to Vizianagram and Salur; also to Bobbili.
8. Karasa to Devarapilli, Srungavarapukota, and Kasipatnam; and to Annapalli and Yelamanchili.
9. Balacheruvu to Chodavaram, Vaddadi, and Madgol; and to Narsipatam; also to Annapalli and Yelamanchili.
10. Pentacotta to Tuni, and to Yelamanchili.
11. Karasa (in Godavery) to Yelamanchili via Tuni.

"Salt which is brought from the Ganjam side enters this district through Palkonda; that from Karasa, through Tuni. The salt traffic which leaves the district does so invariably through Rayaghada and the Jeypore country."

"The names of the principal salt markets have been given above; I will here state the sources from which each market draws its supply:—

- | | |
|--|---|
| 1. Ganupur and the other places in the Taluk. | } From Nowpada |
| 2. Parvatipur and the other places in the Taluk. | |
| 3. Talur and the other places in the Taluk. | } From Nowpada, Oomaravilli, Kuppili, Konada and Binalipatam. |
| 4. Narsipatam | |
| 5. Chodavaram, Vaddadi and Madgol... | From Balacheruvu. |
| | do. |

* In the Ganjam District.

- | | |
|--|---------------------------------------|
| 6. Devarapalli, Srungavarapukota and Kasipatnam. | } From Karasa. |
| 7. Vizianagram and Gajapatinagram... | |
| 8. Bobbili ... | From Kuppili, Konada and Binalipatam. |

"The marts in Rayagaddu get their salt from Nowpada and Oomaravilli."

GODAVERY.—The Collector of Godavery gives the following account under the head of distribution:—

"A list exhibiting the principal salt markets and the source from which each such market draws its supply, is enclosed."

"Salt is conveyed chiefly on bandies through the Samuleotta Canal road to Samuleotta, thence to Peddapur and Juggampetta through the Peddapur road, lately constructed and gravelled between Peddapur and Juggampetta. From Juggampetta there is a direct road to Gokavaram, and from the latter to Rampa country. It is through this road that the brigjaris and other hill tribes from Bustar and other hilly places, resort to the Penuguduru stores, *via* Gokavaram, Juggampetta, Samuleotta and Cocanada, with a large number of bullocks to take salt to their country."

"Tuni which lies at a distance of about 60 miles from Cocanada on the frontier of this and the Vizagapatam Districts, is also connected with Cocanada by the road passing through Samuleotta, Pittapur, Bandapudi and Annavaram. Salt is carried to the places in question through this road either on bandies or cavadis."

"Cocanada and Dowlaishweram are connected with each other by the Samuleotta and Cocanada Canals, which flow through many of the villages of the Ramachendrapur Taluk, and a few of Rajahmundry Taluk. At Dwarapudi and Anaparty on the Samuleotta Canal, and Artamar, Tapeswaram and Mandapetta on the Mandapetta Canal, there are store-houses of salt, which receive supply from the Penuguduru stores on bandies up to Cocanada, (four miles) thence in boats during the greater part of the year. During the hot weather, the ancient canals are generally closed for a few months, when salt is carried on bandies through Ramachendrapur road, and thence to Mandapetta, Tapeswaram and Artamar, through the Mandapetta road, and also to Dwarapudi and Anaparty, along the bank of Samuleotta Canal."

"The people of Amalapur Taluk receive their supply of salt from Penuguduru and Mogultur in boats by two ways:—

from the former place,

1st, by sea to Coringa, and thence along the Godavery branch to Mukteswaram in the Amalapur Taluk, where there is a road passing through Amalapur to Rajole:—

2nd, in bandies as far as Cocanada, and thence in boats to Amalapur through the Cocanada and the Amalapur Canals *via* Dowlaishweram:—

from the Mogultur station,

1st, in boats on the Godavery as far as Bodasakurru, which is situated on the line of road between Mukteswaram and Rajole:—

2nd, by the Godavery as far as Rajole and from Rajole, by the canal to Gunnavaram Aqueduct, whence there is a road to Amalapur.

"*Yernigudem Taluk.*—Tallapudi, Chagallu, Tadipaligudem and Lakkavaram are the only places in the Taluk where the wholesale trade of salt is carried on. The first two villages lie on the right bank of the Godavery. From Penuguduru salt is carried in boats to these places through the Cocanada Canal up to Dowlaishweram, and thence on the Godavery. The 3rd village is situated on the bank of the Ellore Canal. Salt is carried in boats through the Cocanada Canal as far as Dowlaishweram, then crossing the Godavery and after passing the Vijhaswaram lock, it passes into the Ellore Canal. Salt is carried to Lakkavaram on bandies from Tallapudi through the road between the latter and Ashwarupetti."

"*Ellore Taluk.*—Poolla, Bheemadole, and Ellore, are the only places where wholesale trade in salt is going on at present in the taluk. They all lie on the banks of the Ellore Canal; salt is generally carried in boats from Penuguduru through the Cocanada Canal up to Dowlaishweram, and thence through the Ellore Canal. From Mogultur it is carried in boats through the Narsapur Canal up to Chettipet and thence through Ellore Canal."

"*Narsapur Taluk.*—Palcole and Narsapur, where the wholesale trade of salt is carried on, are connected with Mogultur by a canal through which salt is chiefly brought in boats."

"*Bheeravaram Taluk.*—Veeravasaram, where the Tahsildar of the taluk holds his office, is the only station of any importance in the Taluk. It is connected with Palcole by a road. Salt is brought in boats as far as Palcole and thence it is carried on bandies to Veeravasaram. Akeed, a village in this Taluk, receives its supply of salt from Bantumilli in the Kistna District."

"*Tanuku Taluk*.—Narsapur Canal which connects Rajahmundry and Narsapur, passes through the interior of the Taluk. Attili, Penugonda, and Relangi, the principal places of the wholesale salt trade in the Taluk, are connected with Narsapur by ancient canals. They thus receive salt in boats from Mogultur. When the canals are open, salt is carried to many villages in the Taluk along the irrigation channels.

"*Bhadrachalam Taluk*.—Salt is carried to a great extent to the Central Provinces and to the territories of the Nizam and the Rajah of Bustar, *viz* Bhadrachalam and Dummagudem. The distance from Penuguduru to Bhadrachalam is 100 miles. It is carried in boats through the ancient canals up to Dowlaishweram and thence on the Godavery."

List of principal markets in the Godavery district and the sources from which each market draws its supply.

Taluk.	Principal markets.	The sources from which each market draws its supply.
1. Ramachendrapur	1. Draksharuna 2. Dwarapudy 3. Mandapeta	Salt stores of Penuguduru.
2. Amalapur	1. Ambajipeta 2. Kottapeta 3. Amalapur 4. Jagannadhagiri	Do. of Penuguduru and Mogulturu.
3. Peddapur	1. Eleswaram 2. Juggampetta 3. Peddapur	Salt stores of Penuguduru and from the salt store house belonging to the merchants at Peddapur during the rainy season.
4. Cocanada	1. Cocanada 2. Samuleotta	Salt stores of Penuguduru.
5. Coringa	1. Coringa	Do.
6. Pittapur	1. Arampeta	Do.
7. Tuny	1. Tinny 2. Nellipudy 3. Iyyaparaz Kottapally	Salt stores of Penuguduru Division in the Godavery District and those of Pentakota in the Vizagapatam District.
8. Nursapur	1. Palcola 2. Achanta 3. Sivakodu 4. Najaram	Salt stores of Mogulturu Division.
9. Bhimavaram	1. Yerravaram 2. Akced	Do.
10. Ellore	1. Chintalapudy 2. Senvarapetta 3. Kanaparapukota	Salt stores of Mogulturu in the Godavery District and Manginapudy in the Kistna District.
11. Rajahmundry	1. Gokaram 2. Dowlaishweram	1. From the store-house or centre at Rajahmundry. 2. From the salt stores at Penuguduru.
12. Tanuku	1. Attili 2. Relangi 3. Penugonda 4. Pentapudy 5. Nidathanolo	From the stores of Mogulturu.
	1. Palaveram 2. Tallapudy 3. Potavaram	From do. and Penuguduru stores.
13. Vernagudem	Lakkavaram	From the store-house at Tallapudy.
		Do. salt heaps at Penuguduru.
		Do. store-house at Tallapudy.
		Do. stores of Penuguduru (Salt Division.)

KISTNA.—The Collector of Kistna forwards a map which conveys little information. Indeed the salt routes, as there shown, stop short of the salt-works. The two main routes seem to be those running, (roughly speaking), parallel, *i. e.*, north-westerly from Chinna Ganjam to Pondigole on the Kistna, and from Bezvara to Jagiapet; the Nizamatalam and Manginapudy salts seem to meet at Bezvara. Some of the Manginapudy salt and the Buntamilly (Pandraka) salt goes nearly north to Ellore and so into the Godavery district.

NELLORE.—The answer from Nellore is also in the shape of a sketch map. It appears to indicate a long stretch of coast road with communications to the salt-works; a route running northwards by Addanki into Kistna, four westerly routes running into Kurnool and Cuddapah, and a southern route towards Kalahastri. Ongole in the north, Nellore and Gudur towards the south, seem to be the points at which the produce of the numerous pans is focussed before passing inland. There is also a net-work of roads for distribution within the district.

CHINGLEPUT.—The Collector of Chingleput forwards an abstract of the replies of his Tahsildars. The Saidapet taluk gets its supply direct by local roads from the Madras and Home's Gardens depôts. The chief marts are Saidapet, Red Hills, Palaveram, St. Thomas' Mount, Trivettore, Peonamallee, Cunnathur. Salt enters the Trivettore taluk by rail and by road branching from the northern trunk road; chief marts Periacoopam, Cadambathoor and Trivettore. The Ponneri taluk gets its supply from Sunnapagunta by northern trunk road; chief marts Ponneri, Arnee and Pulicat. Chingleput taluk gets its supply from Home's Gardens and Covelong, Chingleput being the mart for salt from the former, Triparcor that for salt from the latter store. The Conjeveram taluk gets salt by western road and by rail; Cuddapah salt, (earth-salt), appears at Conjeveram. Salt passes through this taluk into North Arcot. Through the Madurantacam taluk passes salt both from Madras and Cheyur into North and South Arcot. The chief market is the head-quarters town.

SOUTH ARCOT.—The Collector of South Arcot writes thus:—

"The lines of salt traffic are—

- (1) the road from Merkanam via Tindivanam, Gingi, and Trinomalai to the Salem district;—
- (2) the road from Cuddalore via Panruti and Elavanasore, to Kallakurchi and Salem.

"The only salt which is imported into the district is brought into the northern part of the Trinomalai taluk from Madras via Vellore and Polur. Whatever salt leaves it goes out, as a rule, by the two above routes. The road from Porto Novo via Virudachellam to the Salem frontier will be an important salt traffic line when the large salt works proposed to be established at Harigoshi are finished. There are no periodical salt markets in the district, but the principal places of sale for salt are the kasbals of the eight taluks and the villages of Panruti and Ulundurpett."

From the map, however, which the Collector forwarded afterwards, it appears that Cheyarsalt from Chingleput enters the district at its north-east corner, and that Kaveripattanam salt from the Tanjore district enters the south and occupies to some extent the place once held by the salt of Killo, a division now abandoned.

TANJORE.—From the map forwarded by the Collector of Tanjore the main lines of salt traffic seem to be from Neidavassel westwards and northwards, through the marts of Cheyali, Mayavaram and Cortalum; from Tranquebar westwards to the mart of Tiruvadamardoor; from Negapatam westwards by rail, with marts either on the line or south and north of it, *e. g.*, Kyvalur, Trivalur, Nannilam, Kodavassel, Needanangalam, Manargudi, Kumbakonam, Tanjore, Trivady, Vellam. The Negapatam salt seems also to go south-west by road to the marts of Terappandy and Keelayora and to meet Vedarnium salt at Trittrapoondy. The salt of Tambikandlavankotai, Adrampatam, Kottamavady, and Arasanagiri passes by road into the interior through the marts of Puttucottah, Gundracottah, Aruntangy and Auvediaur Coil. The Collector remarks that the district imports no salt; the trade is entirely outwards.

MADURA.—From the map sent by the Collector of Madura it seems that the Vattanani salt runs partly to Thiupattur and partly directs itself on the railway. From the other salt works of the district the salt converges on the railway stations of Tirunangalam and Madura, supplying on the way the south and east of the district, while into the west and north it spreads from the marts established at various points on the railway, Dindigul, Amainaikanur, Shelavundan, Madura, and Tirunangalam.

TINNEVELLY.—The map submitted for Tinnevely is not very instructive. Even the railway from Tuticorin is omitted from it. The following are the remarks of the Salt Deputy Collector:—

"Vypar supplies salt to such of the villages in Ottapidaram taluk as are in its neighbourhood, Sattoor and Streevilliputtur taluks, and Madura District."

"Salt from *Arasadi* and *Loringpuram* is taken by the merchants and bandymen who visit Tuticorin town on account of trade, to almost all the taluks of the district except Nangunery, and to Madras, but merchants come to these pans mostly from Ottapidaram, Sattoor, Streevilliputtur and Sunkaramanarecovil taluks.

"The ryots of these taluks chiefly who possess carts and bullocks of their own, take cotton to Tuticorin, and on return buy salt and sell to the bazaarmen in villages along which they pass.

"*Coilpatam*.—Bandymen who take paddy and other grains to Alvaratunagiri, Coilpatam, Trichandoor, and other places in Tenkasi taluk, after disposing of their grain, take salt in their return carts and sell it to bazaarmen during the progress of their return journey.

"These merchants generally go from Tinnevely, Ambasamudram, Tenkasi and the northern portion of Nangunery taluk.

"*Kutuvanguli and Vianpaty*.—These both supply the southern part of the Nangunery taluk."

MALABAR.—The Collector of Malabar forwards the following complete statement of salt traffic in his district:—

Taluk.	Names of principal salt markets or bazars.	Gods or source from which the salt market or bazaar draws its supply.	Routes by which salt is taken to and removed from the markets.
Chirakel	1. Cannanore Bazaar 2. Kallipattani do 3. Taliparamba do 4. Irur do	Cannanore	Cannanore Municipal Roads. Coast Road from Cannanore to Kaval. Branch Road from do. to do. and Taliparamba. Do. do. do. and by the Kallipattani river.
Kottayam	1. Kallai do 2. Kuttaparamba do 3. Eppavam or Kannothe Bazaar	Tellicherry	Coast Road from Beypoor to Mangalore. The District Road from Tellicherry to Kuttaparamba. Do. all Kuttaparamba and thence by the road to Mysore via Mannatody.
Kurumbur	1. Vadagara do 2. Nadapuram do 3. Kuttiyady do	Calicut	The Coast Road as far as Elathur, and thence by the backwater communication to Vadagara. The Branch Road from Tellicherry to Kuttiyady via Peringaleen.
Calicut	4. Paygdi do 5. Quilandy do 1. Calicut do 1. Manjeri do	Calicut	Do. from Vadagara to Kuttiyady via Kuttiparamba. The Roads shown for Vadagara Bazaar. The Coast Road to Tellicherry via Koppozha. The Town Roads.
Ernad	2. Kondotti do 3. Malapuram do 4. Kottakel do	Beypoor	Beypoor river as far as Marandi, and thence by the road to Manjeri via Kondotti. Do. do. and thence by the road to Malapuram which branches off from the shore at Mangem and leads to Malapuram; and also by the Malapuram River in the rainy season.
	5. Tirodangady do 6. Parpergady do 7. Arikode do 8. Edavanna do 9. Marubot do 10. Edapal do	Calicut & Beypoor	By the Kallai, Beypoor and Chullam rivers, it taken from Calicut and Beypoor pollahs, and if from Ponany, by the river as far as Tiroor and thence by the District Road via Kottakel to Malapuram.
Ponany	2. Ponany do 3. Vetotpudiangady Bazaar 4. Tanor do	Ponany	The Kallai, Beypoor and Chullam rivers. Do. and the District Road from Beypoor to Tanor. Kallai and Beypoor Rivers. Salt Road from Ponany to Puttanby (Trunk Road No. 5). The Bazaar Road. The water communication from Ponany as far as Kallurkadavu, and thence by the cross road leading to the bazaar. The water communication as far as Tiroor, and thence by the District Road leading to Tanor.

Taluk.	Names of principal salt markets or bazars.	Gods or source from which the salt market or bazaar draws its supply.	Routes by which salt is taken to and removed from the markets.
Wallovanad	1. Katapara Bazaar in Palamantole Anashori 2. Pettamby Bazaar 3. Wottapalera do 4. Perantamanna Bazaar	Ponany	The Ponany river during the wet season; and the salt road (Trunk Road No. 5) during the dry season. Do. do. Do. do. and by the rail. Do. and by rail as far as Puttanby, and thence by the road to Perantamanna. By rail, if from Madras and Beypoor; and the said Trunk Road No. 5, if from Ponany.
Puttanby	1. Palghat do 2. Palathulli do 3. Alathda do 4. Pathumagarem do 5. Wadukancherry do 6. Mannor Korot do 7. Mannatody do	Madras, Beypoor and Ponany	The salt purchased from Palghat bazaar is carried to the several bazars by branch roads leading to them.
Wynad	3. Sultan's Battery do 4. Gullalar do 5. Vetheri do 6. Cechin do	Tellicherry and Cannanore	By the road from Vadagara to Mannatody. Road from Tambercherry via Kattiyady and Peria to Mannatody and thence to Mysore. Tambercherry road via Kalpetta leading to Mysore.
Cochin	1. Cechin do	Calicut	Do. separating from Sultan's Battery and leading to Coimbatore. Tambercherry road leading to Kalpetta. Municipal roads encircling the town.

SOUTH CANARA.—The Collector of South Canara forwards a map with the following remarks:—

"All the salt consumed in the district is imported by sea; no salt enters by land, except a small quantity across our northern boundary from Shirali and Bhatkal, two salt stations situated in North Canara, (Bombay Presidency), about eight miles from our frontier, and twelve from our northernmost salt station of Baindur. Salt also frequently passes through the northern portion of our district from the above stations in North Canara to Mysore via the Kollur ghut."

There appear from the map to be five main routes into Mysore and one into Coorg; thus from Kundapur two roads into Mysore, from Mabukal and Malpe one road into Mysore, from Mulki one road into Mysore, from Mangalore, Manjeshwar, Kasargode, Pane Mangalore and Buntwal a network of roads ending in two main routes, one into Mysore, the other into Coorg. These routes, with certain cross roads, seem to carry the salt for internal distribution likewise.

SALEM.—The Collector of Salem writes thus:—

"The salt supply of this district is derived from the Madras and South Arcot pans. The Madras salt comes by rail. The South Arcot, or Merkanum salt, as it is usually called, is brought in carts by their owners and sold at the kasbah stations. Carts frequently go to Pondicherry, Cuddalore, Tindevanam, and other places thereabouts, being hired either by travellers or for merchandize. On arriving at their destinations, the cart-owners for the most part proceed direct to the salt-pans and return with a cart-load of salt, which they sell to merchants in Salem, realizing a good profit. No one from this district goes to the South Arcot pans for the sole purpose of buying this salt, but use is made of the return journeys for procuring it. The salt to Salem and Ahtoor arrives by the Salem and Cuddalore road. The distance from Ahtoor to the pans is reported to be 120 miles, that from Salem to Ahtoor, (which is on the way to Salem), being 31 miles. The only other place where this salt is received is Utangiri. Here also salt is brought in return carts. The distance from Merkanum to Salem and to Utangiri is about 120 miles."

COIMBATORE.—The Collector of Coimbatore merely remarks as follows:—

"The salt traffic follows the line of rail, which it leaves at the point nearest its destination. Thus I observed salt for the Siroomeogay market and the north, leave the Neilgherry branch line at Caramadai, 5 miles short of Mettapolliem."

NILGIRIS.—The Commissioner of the Nilgiris observes:—

"Salt dealers at Ootacamund obtain black salt from Ponany in Malabar District, and white salt from Madras. Salt is brought to Coonoor by persons coming up for the shandy, who purchase the same at the salt godowns at Mettapolliem."

TRICHINOPOLY.—The southern and western portion of the district of Trichinopoly consumes Tanjore salt, mostly rail-borne salt from the works of Negapatam, Valangani and Vedarniem, but partly salt carried by road from Adampatam. Trichinopoly is the chief

centre from which this salt radiates. In the west and north of the district the salt of South Arcot comes in from Gundalun and did also from Kille till that division was closed.

NORTH ARCOT.—The Collector of North Arcot gives the following account of the salt traffic of his district:—

“Madras salt is generally imported into this district by rail, though sometimes it is brought in carts by the high road leading from Madras to Bangalore. It leaves the district and enters into the Madanapallai taluk in the Cuddapah District by the road leading thither from the Godiattam Railway Station through Palmanair.

“The salt from the Nellore District comes in through Naidoopett and is sold in the markets of Kalahastri and Chendragiri.

“The salt from the South Arcot District comes into the markets of Wandewash and Polur by the high roads running in that direction.

“The salt of Chayur and Chunambut enters the market of Wandewash through the road connecting those places.”

CUDDAPAH.—The Collector of Cuddapah writes:—

“This district is supplied with salt mainly from Madras by the rail, and salt is sold at all the principal stations of the railway. Lambadis bring salt on bullocks from Nellore and enter this district in the Budwail taluk whence they pass through the district, supplying as they go the villages on the way, to Mysore, Bellary, and other districts. The markets in all the taluk head-quarters and that in the district head-quarters are supplied with any quantity of salt, and from these places salt is taken to the rural population. The above markets are supplied with the article either by the railway or by the lambadis.”

BELLARY.—The following are the remarks of the Collector of Bellary:—

“The trade in salt is limited to the railway stations. Merchants from the interior make their purchases there and retail the salt. In the western taluks the salt is obtained from Dharwar and Kooympta, and in the southern taluks from Bangalore.”

V.—Distribution, (para. 11 of Circular).—The information obtained in reply to para. 11 of the Commission's circular has been worked up elsewhere and need not be repeated here.

VI.—Distribution, retail sale, (para. 12 of Circular).—The reports on the mode of retail sale in answer to para. 12 of the circular are given below against each district, the authority being the Collector unless the contrary is stated.

GANJAM.—Consumers for the most part procure their supplies in the bazaar. Some, however, purchase from hawkers, others at the periodical markets. Most of the retail salt procured by the hillmen is obtained at the weekly markets above and below the ghats. Above the ghats the custom of obtaining salt by barter largely prevails. The brinjaria also from the Central Provinces bring down wheat, oil-seeds, &c., which they occasionally barter for Nowpada salt, purchased by traders. Most of them, however, purchase their salt direct from the Government stores at Nowpada. Traders buy salt from Government by weight and sell it by measure.

VIZAGAPATAM.—Retail sale is carried on in three ways; by hawkers, in the weekly markets, and, in large towns, in the bazaars. In the towns the bulk of the population buy from hawkers who visit the several houses periodically. The shifting population generally, and others on particular occasions, resort to the bazaars. The poorer classes who do not buy more than one or two pie worth of salt at a time generally take from the bazaars. In the rural villages hawkers now and then sell salt, but the bulk of the supply is obtained from the weekly markets.

In the towns salt is invariably sold for money. In the out-lying villages there is the practice of obtaining salt by barter; but it does not prevail to a very great extent except above the ghats, and at the places mentioned above as the centres of wholesale salt trade. There the rule is to buy and sell salt for rice, pulses, cotton, oil-seeds, and other hill products; sales for money are the exception.

Salt is sold everywhere in the district by measure and never by weight.

GODAVERY.—The bulk of consumers procure their supplies partly in the bazaars from the banias or shop-keepers, partly at the periodical markets, and partly from the kavadinmen who bring salt from house to house daily. It is always sold by measurement, not by weight.

The custom of obtaining salt by barter does not prevail, except in the jungle parts of Bhadrachellam and Yernagudem taluks, where the hill tribes buy salt from wholesale dealers in exchange for tamarinds, honey, horns, myrabolams, &c.

KISTNA.—Salt hawkers are found to the south of the Kistna but not to the north, and they will sell or barter their salt; but the bulk of the people get their salt from the village kamati who from time to time engages a bullock or two and goes to the kotar to purchase it. Further inland there are always the large towns to which he can send or go and replenish his store.

NELLORE.—(Salt Deputy Collector).—There are no periodical markets in this district, but the bulk of the consumers buy from the bazaars and hawkers. In villages within ten or fifteen miles of the coast petty dealers buy one or two mounds at a time from the Government depôts and hawk it about in “kavadi,” or head loads to the consumers. In villages more inland bandymen come down and buy at the Government depôts and take their purchases and retail to the “kamatis” or bazaar-men of their villages, who sell again to the public. At the Government depôts the sale is made by weight, the minimum quantity being one Indian mound of 82½ lbs., but all transactions among the people in salt are made by measure even to a minimum of one pie or 1/16th of an anna's worth.

It is not unusual to barter salt for rice, jonna, or other food grains, and the rate of conversion depends entirely on the price of the grain with reference to season, harvest, condition of standing crops, demand, &c.

CHINGLEPET.—(Salt Deputy Collector).—Respecting sales of salt, it is first purchased from the kotar. It is then conveyed into the interior, where depôts formed at different places exist. Some retail dealers purchase it from the depôts for sale at the weekly markets held in some of the villages, and others have it vended from door to door, either by bullocks, carts, or coolies. Merchants who purchase small quantities in retail at the Government depôt, observe the same system. It is not customary in this district to barter salt; but occasions arise when grain or other goods are taken at equal value in exchange.

SOUTH ARCOT.—Salt is retailed by measure and is purchased generally in the bazaars. It is also carried about in some parts in carts and sold by hawkers in the out-lying villages. In the Trikalore taluk, in out-lying villages, grain is sometimes bartered for salt, but the practice does not appear to be a general one.

TANJORE.—The bulk of the community procure their supplies of salt in bazaars and periodical markets. A caste called koravers carry on the profession of hawkers in this district. These men set out in different companies and purchase salt, (not in large quantities), conveying it on asses or pack bullocks to remote places, (often without roads), where the article is dear owing to wheel traffic not being within reach, and barter the same for grain such as paddy, raggy, &c., and occasionally for money. The barter system prevails only in the southern parts of the district far from salt depôts, and it is a matter of little doubt that these pedlars are, as reported by Mr. Ricketts, addicted to the practice of adulterating the salt more than most dealers and often to the extent of a moiety. Some basketwoman also, convey salt to distant parts and barter the same for grain. Salt is generally sold for money. It is invariably sold by measure and not by weight.

MADURA.—The usual, indeed invariable, mode of retail sale is by measure. It is difficult to say whether the bulk of the consumers procure their supplies in the bazaars, from hawkers or at the periodical markets. It depends on the circumstances of the locality. Generally speaking, in almost every village there is a petty bazaar at which people buy what salt they want. In some localities, there are much frequented fairs and markets at which a good deal of salt is sold. Occasionally the supply is obtained from hawkers. On the whole the Collector is of opinion that the bulk of the supply is obtained from the bazaars. The custom of barter is not uncommon, especially at the markets at the foot of the hills to which the hill people come down. But the very great majority of purchases must be made for cash.

TINNEVELLY.—(Salt Deputy Collector).—The people residing in towns and taluk kasbahs generally purchase salt in their respective bazaars. In less important stations where bazaars do not exist, the people buy in markets or “shandies” which are held weekly or bi-weekly in the immediate neighbourhood of their residences. In other rural parts, which are far away from any of the scenes of the weekly markets, it is bought by people from the hawkers or persons who go about with bag-loads of salt from one village to another. These hawkers sell salt in harvest seasons in exchange for grain and sometimes for cotton.

The salt is generally sold by measure in all the places. The practice of selling by weight is recently introduced in Tinnevely, Palameotta, and in one village, Ettampooy, near Vizianpatti salt station.

MALABAR.—The bulk of consumers usually procure their supplies in the local bazaars in small quantities. People in the rural parts generally make their purchase at the weekly fairs. The practice of hawkers moving about the country parts with loads of salt for retail sale, though not a rule, is sometimes in vogue. The custom of obtaining salt by barter prevails

in some parts of the district amongst the low castes such as Cherumars and other menial labourers who make daily purchases from petty retail shops out of their wages which are generally paid in grain. The latter is given as an equivalent in exchange for the former. Retail sale is as a rule by the seer, which is exactly half a Macleod measure. In some places nazirs and uris which are equal to one-fourth and one-eighth of a Macleod measure are also employed in measurement.

SOUTH CANAL.—The bulk of the consumers procure their supplies in the bazaars, there being small shops scattered throughout the district.

The custom of obtaining salt by barter does not prevail to any extent, but it is said that saline earth is carried by fishermen along with their fish into the interior and bartered for paddy, the measure being used for both.

The abstract of Tahsildars' replies gives the following. The concluding statement is however, directly contradicted by the Collector who declares that retail sale is by measurement.

'In some taluks, the poorer classes supply themselves as hawkers to whom they give rice in exchange—the rates varying from two to three measures of paddy to one of salt. There are no periodical fairs or markets in the district.

'Salt is invariably sold by weight.'

SALEM.—In this district, salt is nowhere weighed, but is always sold by measure. It passes through several hands before it reaches those of the consumer, and the price of the salt is thereby correspondingly increased. In the first instance, the merchant at Madras or the firm that supplies the depot at the railway station makes a profit, then follows the godown-keeper who does not sell small quantities, but only for round sums to the bazaarmen, who sell by retail. From these the bazaarmen of the larger villages make their purchases; the people of insignificant outlying villages being supplied by itinerating sellers, who carry their stock from village to village and barter their salt for grain or other provisions or sell for money according to circumstances. A race of hawkers called "uppukuravers" principally follow this trade, being generally provided with asses or pack bullocks. Salt is also carried to all weekly markets where the villagers buy enough of salt to last them till the next market.

COIMBATORE.—Salt is usually procured at weekly markets held in the principal villages. In towns it is procured from shops; it is hawked in petty villages. It is sold by measure.

NILGIRIS.—The consumers on the Hills generally procure their supplies of salt at the periodical markets. Salt is sold by measure. The custom of obtaining salt by barter does not appear to prevail anywhere in this district.

TRICHINOPOLY.—The bulk of the population procure their supply from the ordinary bazaars. Salt is also extensively sold at the periodical markets. Barter for grain is occasionally resorted to in the remoter parts of the Trichinopoly and Udaiyarpalayam taluks. Throughout the district salt is sold by measure and never by weight.

NOBIL ANCO.—The bulk of the consumers procure their supplies in the bazaars and periodical markets. Hawkers sell salt occasionally in outlying villages. The custom of obtaining salt by barter prevails to a very limited extent in outlying villages only. Except in salt stores at railway stations, where the article is sold by weight, the sale is, as a rule, by measure.

KURNOOL.—Earth-salt is sold in retail by measure and not by weight. The bulk of the consumers in some of the villages of the Patticoonda, Nundial, Koilkuntla, Nundicottur and Ramallacota taluks, where periodical markets are held, procure their supplies at such markets, while others obtain them in the bazaars from the hawkers. The custom of obtaining salt by barter prevails in some instances where hawkers carry salt into villages to sell.

CULDAPAH.—Salt is sold throughout the district by measurement alone. Consumers residing in the district and taluk head-quarters and other important places obtain salt in the bazaars of their respective villages, and those residing in remote villages obtain it from the bazaar in the taluk head-quarters or from the periodical markets, according to circumstances. Lambadis who traffic in salt supply the article to people in Kadiri, Royachoty, and other taluks which are far from the railway, and obtain in lieu of that article different sorts of grain and other articles of trade. The people of the sub-division taluks, (Madenapully, Kadiri, Voilpau and Royachoty), take the produce of their country, viz., jaggery, tamarind, &c., to Vellore in the North Arcot District on carts, and bring salt from that place in exchange of the above articles.

BELLARY.—Salt of itself does not form an extensive item of trade. It forms a portion of the stock of the bazaarmen, and it is invariably sold by the measure. Sea salt is not the subject of barter, though earth-salt is almost universally.

VII. Consumption, (para. 13 of Circular).—The replies to para. 13 of the Circular, asking for information as to the consumption of salt otherwise than as a condiment for human food, are collected below.

CANJAM.—The custom of giving cattle a small quantity of salt at the commencement of the rains, or if they show symptoms of disease, obtains pretty generally throughout the district among those classes who are able to pay for it. The quantity given per head of cattle is about seven tolas weight once or twice a day for three or four days in succession. Goats get about 4½ tolas weight each once a fortnight during the cold and wet weather and once a month during the hot season.

The custom of using salt as a dressing for cocoanut trees, does not prevail generally, though there are occasions when it is so applied. The quantity used varies from 15 to 30 tolas per young tree, and about 120 tolas for a mature tree. It is not used as a dressing for tobacco, or for any other agricultural purposes.

It is quite impossible to state with any degree of accuracy, the probable quantity of salt so consumed.

VIZAGAPATAM.—Salt is commonly used as medicine for certain kinds of cattle-disease. In the hill tracts salt is sometimes given to draught cattle in the rainy season either by itself or mixed with raggy. A handful of salt is given to each animal. Here and there in the low country it is sometimes mixed in the water which the cattle drink. This is usually in the hot weather. Very little salt is consumed by cattle.

The practice of using salt as a dressing for cocoanut and citron trees also exists, but to a very limited extent. Salt is not used as a dressing for tobacco and for other agricultural purposes. It is occasionally used for preserving tamarinds.

The quantity of salt used for purposes other than human consumption cannot be estimated with any accuracy.

GODAVERY.—It is usual to give salt as medicine to cattle when they are attacked with certain diseases, and at each time, one or two ounces with reference to the age of the animal is given. Enquiries show that salt is not used as a dressing for cocoanut or other plants. But it is said that salt earth (chondra) is generally put at the foot of cocoanut trees, chilly, and tobacco plants for the purpose of checking the damage caused by worms, &c.

KISTNA.—Salt is given by bandy-drivers to their bullocks and frequently by cow-keepers to their cows, but amongst the ryots it is not a general habit. It is given as a medicine however by the latter.

It is not used for agricultural purposes.

NELLORE.—(Deputy Collector).—It is not unusual to give salt to draught as well as other cattle chiefly in the monsoon months or at other times when necessary, as when the animal does not graze or drink well. Then the salt is used to promote appetite as well as thirst. There appears to be no rule as to the quantity used, and this evidently depends entirely on the opinion, circumstances, and caprice of the owner:—a poor man will give less to his cattle with the same object than his richer neighbour would, and the variation ranges from three or four tolas or rupee's weight, to about twenty.

Salt is known as a dressing for cocoanut trees, and the quantity here too varies as in the case of cattle from one-quarter to five or six seers per tree. The Kavali Tahsildar writes on this point as follows: "When cocoanut trees are planted, they dig holes and pour about two manikas of salt, i.e., 3½ seers, per tree, along with sand or red earth in them, and then fix the plants. Whenever afterwards in the growth of these trees the shoots are infested with insects or become blighted, the planters bend down the branches of each and pour in about a manika of salt between them at the sprouts."

Pure salt as a dressing for tobacco or other agricultural purposes is not known, but salt-earth is not unfrequently used in tobacco gardens.

CHINGLEPUT.—(Deputy Collector).—Salt is not usually given to draught or other cattle, but small quantities are occasionally rubbed into their mouths when they become sore, to induce the cattle to drink freely by the taste of the salt. The Deputy Collector often heard of salt being used as a dressing for cocoanut trees, but not for tobacco. The statement as to the cocoanut trees was, however, found to be untrue, whenever particular enquiries were instituted by him. Nevertheless, it may be used perhaps when young trees are planted. He knows that saltish earth is sometimes thrown about the roots of the trees. This is not done however in large plantations. When cocoanut trees are planted in black or red soil, worms of a certain description destroy the leaves. To avoid this, sea sand is used once only when planting them. For agricultural purposes, he is not aware that salt is used. It certainly has never been sold in the Chingleput district for dressing cocoanut trees.

SOUTH ARCOT.—Salt is not ordinarily given to draught or other cattle except medicinally. It is used as a dressing for young cocoanut trees when first planted out. No means exist of forming even an approximate estimate of the quantity of the salt so used, but the Collector would say it was excessively small.

TANJORE.—The Collector is not aware that it is usual to give salt to draught or other cattle except for medicinal purposes and during the winter season, when they are off their feed and especially water, and then only in small quantities; in fact all cattle stand much in need of a great deal more salt than they ever get in this country, the hindrance to their getting it being only the cost. Even children suffer much from worms in consequence of not having enough salt in their food. It should be remembered that graminivorous animals and vegetarian human beings stand more in need of salt than meat-eaters. The reason is obvious.

It is a well known fact that salt is often used when transplanting cocoanut plants with a view to preserve them from white ants and other insects. This system prevails in some exceptional localities only. Salt is also used as a dressing for tobacco when there is no salt in the soil; but the Collector is unable to give an approximate estimate of the quantity so consumed, as no definite information regarding the same can be gathered.

When the cocoanut trees do not either grow well or take to bearing, salt is thrown at the root of the tree in the former case, or put into the tender branches at the top, at the average rate of half a measure per tree or more, according to the means of the owners of the trees. Diluted salt is also sprinkled on tobacco leaves to preserve them from being spoiled.

MADURA.—It is not usual to give salt to draught or other cattle except medicinally. It is used as a dressing for young cocoanut trees, about $\frac{1}{2}$ of a measure being put into each hole to keep the white ants away. It is not used otherwise in agriculture. There is a certain consumption of salt for dressing sheepskins, which in the Melur taluk is estimated at less than a maund a month and must be very small everywhere. The Collector can furnish no estimate whatever of the quantity used for this and for other petty purposes.

TINNEVELLY.—(Deputy Collector).—The salt is given to cows, bulls and horses when they are either dull or do not take to eat and drink as usual. The quantity given for a dose to each is generally $\frac{1}{2}$ of a measure; salt also forms a component part of a treat called "masala" prepared for horses, bandy bullocks, and cows, and administered to them periodically. This is done to keep the animals in sound health and free from worms. The quantity of salt mixed with the "masala" varies according to the proportions of other condiments forming the "masala" and to the age and strength of the animal; but the minimum quantity is said to be $\frac{1}{2}$ of a measure. No particular season is observed for the administration of this "masala." Animals maintained with care and attention are administered to every two months by their owners. In other cases, it is done when cattle are off their hunger and when a necessity actually exists and also when they are attacked with mouth-diseases.

MALABAR.—The Collector does not seem to have replied on this point.

SOUTH CANARA.—The Collector reports thus:—

"It is not usual to give salt to cattle. It is, however, used in some instances in cattle disease.

"Salt is not used for agricultural purposes."

But the abstract of Tahsildars' replies runs as follows:—

"Salt is not usually given to ordinary cattle, except when they fall sick. The more valuable animals, however, are sometimes given a little, but no particular season is mentioned except by one Tahsildar, who speaks of the months of August and September.

"From half to three seers of salt are usually put into the hole when a young cocoanut tree is transplanted. This is said to keep off the white-ants, and to invigorate the tree. It is sometimes used as a manure afterwards.

"Salt is not used for other agricultural purposes; but one Tahsildar reports that sometimes salt-earth is applied to exhausted paddy ground."

SALEM.—Salt is rubbed on, or tied to, the tongues of draught bullocks for certain diseases, but it is impossible to say how much is so consumed by cattle. Salt is too costly an article to be ordinarily used as manure by the ryots at large, but it is used as a dressing for the grape vine and for orange trees on the Shevaroyas. When young cocoa plants are transplanted, a couple of measures of salt are occasionally thrown into the pit so as to cover the nut on all sides. This is done only in small cocoanut plantations in order to keep off white ants from the nuts. Further when a cocoanut tree in bearing is attacked by a boring beetle, a small quantity of salt is rammed into the trunk of the tree. This is supposed to destroy the insects in the

tree. The Collector is unable to say what quantity of salt is expended in the above manner. Salt is not used in this district in the culture of tobacco.

COIMBATORE.—Salt is given to cattle, but its price limits the practice. It is not used as a dressing for cocoanut trees, tobacco, or anything else. If it were cheaper, it would not be adulterated for human consumption.

NILGIRIS.—Salt is given to draught or other cattle once in two months at the rate of $\frac{1}{2}$ of a Madras measure per head. It is not used for agricultural purposes.

TRICHINOPOLY.—In the Trichinopoly taluk salt is said to be given to cattle as a medicine and to be used as a top dressing for cocoanuts and tobacco. In the Udaiyarpalaiyam taluk sheep get salt 3 times a year, one measure between ten sheep. Ploughing cattle also get salt in their water two or three times a year. No estimate can be given of the quantity thus consumed.

NORTH ARCOT.—It is usual to give salt to sick cattle, particularly draught bullocks, whenever they abstain from feeding and drinking. The quantity so administered for each bullock is between $\frac{1}{2}$ and $\frac{1}{4}$ measure.

It is used as manure for cocoanut trees at the rate of about 1 measure per plant, at the time when the nut is first put in the ground. It is not used for tobacco and other plants in North Arcot.

KURNOOL.—The inferior kind of earth-salt is given to cattle. It is given in quantities varying from $\frac{1}{2}$ to 1 measure for each head of cattle. The salt is generally mixed with rice or other grain and is usually given to cattle during the cold season, when they are not inclined to drink the usual quantity of water. Earth-salt is also used as a dressing for cocoanut trees. Cocoanut topes are very scarce in this district, and the approximate quantity used as a dressing for these topes cannot be ascertained. It does not appear that earth-salt is used as a dressing for tobacco or other agricultural purposes.

CUDDAPAH.—Earth-salt is generally given to ploughing cattle in all seasons, and especially in the cold weather, and sea-salt is used in dressing cocoanut and lime trees. The quantity of earth-salt given to each animal at a time is generally a handful. It is not possible to estimate the quantity of salt used in dressing trees in this district.

BELLARY.—Earth-salt is given to cattle in wet and cold weather, in quantities varying from one to three ounces per week per head. Similarly it is used in some places as a dressing for cocoanut trees alone, from $\frac{1}{2}$ to 1 seer per annum, per tree. In two taluks it is used for tanning (siring hides). The Collector is not, however, able to give an approximate estimate of the quantity so consumed.

VIII. Value, for other purposes, of land occupied by salt works, (para. 14 of the Circular).—The circular endeavoured in three ways to collect some data for forming an opinion as to the value, for other purposes, of the land occupied by salt works:—

- (1) by enquiry as to the value for such purposes of land now occupied, (columns 2—6 of the prescribed statement, are addressed to this object);—
- (2) by enquiry as to the nature and value of the land taken up for salt works during the last ten years, (see columns 7—11 of statement prescribed);—and
- (3) by enquiry as to the fate of land once occupied by salt works, but abandoned within the last twenty years, and its revenue, if brought under cultivation.

The replies are summarised in a tabular form in the following statements—

(1.) Summary of replies to enquiry as to the value of land now occupied by salt works, (columns 2—6 of prescribed form.)

District.	Total area of works.	Area fit for cultivation otherwise than with salt.	Rate of assessment, actual or estimated.		Revenue, actual or constructive.	
			Rs.	A. P.	Rs.	A. P.
Ganjam	2267-02	225-1-6	2-1	0-0	450-1-9	0-0-7
Vizagapatam...	2221-58	48-7-75	8-6	0-0	390-7-11	3-0-0
		12-9-5	6-0	0-0	77-11-0	0-0-0
		1-6-25	5-0	0-0	8-2-0	0-0-0
		38-2-4	4-1	2-1	157-12-0	0-0-0
		119-4	1-4	0-0	119-0-0	0-0-0
		224-5-50	...	...	757-12-0	0-0-0
Godavery	1000	150-100	2-0	0-0	300-0-0	0-0-0
		250	...	...	350-0-0	0-0-0
Kistna	1882-82	91-1-73	0-0	8-0	45-8-9	0-0-0
		164-1	...	...	100-4-9	0-0-0
Nellore	2223-22	44-8-5	1-0	0-0	44-13-7	0-0-0
Chingleput	6437-58	46-5-5	1-3	8-0	69-13-2	0-0-0
		21-3-2	3-12	0-0	79-15-2	0-0-0
		8-9-7	3-8	6-6	31-12-5	0-0-0
		3-6-7	2-10	4-4	9-10-8	0-0-0
		80-5-1	...	...	191-3-5	0-0-0
South Arcot	1471-71	25-3-3	1-15	6-6	49-14-0	0-0-0
		68-1-9	1-9	6-6	108-6-0	0-0-0
		40-7-6	2-8	0-0	101-14-0	0-0-0
		7-1-8	5-4	7-7	37-15-0	0-0-0
		39-9-7	4-10	11-11	187-2-0	0-0-0
		181-2-4	...	...	485-3-0	0-0-0

(1.) Summary of replies to enquiry as to the value of land now occupied by salt works, (columns 2—6 of prescribed form)—continued.

District.	Total area of works.	Area fit for cultivation otherwise than with salt.	Rate of assessment, actual or constructive.		Revenue, actual or constructive.	
			Rs.	A. P.	Rs.	A. P.
Tanjore	4717-4	132-30-53-51	0-1-1	12-0-4-2-8-0	99-37-80	0-0-4-2
		215-51	...	...	217-1-2	0-0-0
Madura	441-29	2-11-2-53-5-31	3-1-1	5-1-4-6-0-0	7-3-5	0-0-0
		9-9-5	...	...	15-9-0	0-0-0
Tinnevelly	3868 (of which 2800 odd, jungle and waste land at Vypaur).	1214-114-165-42-87-51	0-0-0-2-0-1	4-0-5-7-0-0-7-6-5-9	303-35-57-84-40-69	8-0-9-3-0-0-5-3
		1673	...	...	590-13-0	0-0-0
South Canara...	777	777	2-0-0	0-0-0	1,554-0-0	0-0-0
Total...	27411-22	3847-31	...	...	4,758-5-6	0-0-0

(2.) Summary of replies as to the nature and value of land taken up for salt works during the last 10 years, (see columns 7—11 of prescribed form.)

District.	Total area of land taken up for salt works in last 10 yrs.	Area on which compensation was paid or is due.	Area of cultivated land taken up.	Amount of compensation paid or due.	REMARKS.
Ganjam	44-16	28-77	34-11	51-13-4 992-8-0 1,044-5-4	Besides an annual abatement of Rs. 49-10-0 which at 20 years' purchase, gives Rs. 992-8-0.
Vizagapatam ...	299-37	91-37	73-17	11,991-13-0	[exchange for 6 acres.
Godavery	450	4-75	21	...	No cash paid. Land given in
Kistna	390-48	...	141-1	...	No compensation given apparently.
Nellore	85-34	1-21	1-21	5-0-0	Compensation under settlement.
Chingleput	21-3	21-3	21-3	...	No compensation given. The owner of the cultivated land agreed himself to turn it into salt pans.
South Arcot	Nil.	...	...	...	
Tanjore	185-1	...	25-59	...	
Madura	30-94	2-11	2-11	70-0-0	
Tinnevelly	713	56	179	497-6-4	
South Canara ...	18-5	18-5	16-6	2,092-7-4	
Total...	2238-19	224-01	515-19	15,701-0-0	

The nature of the cultivation is variously given as, "paddy and ragi," "dry and wet cultivation," "cheyroot, horsegram, ragi," "palmyra, margosa, tamarind, &c., trees," "peas and gingelly," "rice and cocoanut."

(3.) *Statement showing disposal of land once occupied by salt works, but abandoned within the last 20 years.*

District.	Area abandoned.	Area taken up for cultivation.	Assessed revenue		
			RS.	A.	P.
Ganjam.....	114.5	15.6	30	2	4
Vizagapatam.....	40	0	...	...	...
Godavery.....	1000	7.16	913	0	...
Kistna.....	...	0	...	...	...
Nellore.....	...	0	...	...	...
Chingleput.....	...	0	...	...	...
South Arcot.....	...	0	...	...	...
Tanjore.....	...	22.5	74	9	1
Madura.....	...	26	0	4	0
Tinnevely.....	199.94	4.26	0	13	11
South Canara.....	...	26	1	8	1
Total.....	...	50.04	117	2	5

The Salt Deputy Collector of Vizagapatam states that efforts have been made to utilise salt swamps for cocoanut plantations in that district but without success, and that the general opinion is against the possibility of their being so turned to account. The Collector of Godavery remarks that, having regard to the small area of the abandoned pans which any endeavour has been made to cultivate, he is of opinion that the cultivable area of existing pans has been greatly over-estimated in Statement (1). He does not think that casuarina or cocoanut trees would grow in the salt lands of Penuguduru or Mogullar. Some casuarina trees were tried in 1864, but grew no higher than 2 or 3 yards. The area of the works abandoned is only shewn in five districts. In South Canara the abandoned station is Buindur, but probably the area of the other works has been much contracted. The number of stations closed within the last 20 years in the other districts is as follows:—in Kistna 3 stations, in Nellore 13, in Chingleput 2, in South Arcot 4, in Tanjore 12, in Madura 11 stations. It would be a low average to assume 40 acres for each, which would give about 3,150 acres as the total area abandoned, out of which it appears that an area of only 50 acres has been taken up for cultivation.

IX. *General remarks, (para. 15 of Circular).*—Few Collectors have favoured the Commission with any general observations on the present system. The views of those who have touched on this subject are given in full below.

Collector of Ganjam: (Mr. Davidson).—"I now proceed to offer a few remarks bearing on the subject of the Commissioner's enquiry into the merits of the existing system, by which the Salt Revenue is raised in the Madras Presidency under a Government monopoly, and the expediency or otherwise of replacing it by altered arrangements.

"The only practical knowledge and experience which I have had of the working of an excise system is that which obtains in the Pooree District, where the manufacture and sale of salt appear to be in the hands of a few wealthy monopolists. These men having secured possession of the eligible salt-producing tracts, and having obtained licenses for the manufacture of salt far in excess of the quantity they evidently mean to produce, have it in their power to manufacture any quality of salt and to combine and sell it at any price they may think proper. They are thus able to raise the price of salt at pleasure, to the detriment of the consumer's interests.

"Inasmuch as the Commissioners have personally visited the Pooree District, and have obtained for themselves full information in regard to the method of manufacture, storage, and sale of Pooree-made salt, and as the Commissioners are in possession of the correspondence in which my views on those subjects have already been expressed, there does not appear to be any occasion for me to recapitulate them here.

"I am of opinion, however, that no advantage either to Government or to the public would be gained by substituting in this district such a system of excise as obtains in Pooree for that of the present Government monopoly.

"It is with considerable diffidence that I venture to express any opinion in regard to the Bombay system of excise, as I have no practical acquaintance with it, but from what I have been able to ascertain, it would appear to differ from that in vogue in Pooree, inasmuch as in the former, a healthy spirit of emulation is fostered among the petty manufacturers themselves, which is wholly wanting in the latter.

"But even the Bombay system hardly appears to come up to the standard of pure excise as defined in clause 3, para. iii of the Resolution already referred to, as I understand Government construct and maintain works, provide guards, &c., at their own expense. The introduction of the new system in Bombay was attended by a costly reorganization of the salt establishment and by a multiplication of checks on traders after they had left the stores with their purchases.

"Under the existing monopoly system here, a large and steadily increasing revenue is derived from the manufacture of wholesome salt, which traders like and can procure at the salt works at a fixed and reasonable price.

"The utmost care compatible with the existing establishments is taken to ensure the proper storage and sale of salt and the realization of the Government duty thereon, and, this done, all Government interference ceases.

"In addition to the precautions taken by the Division Superintendent and his Assistant at the time of storage, an exact register is kept shewing by whom each heap has been stored. Daily reports on the subject are also sent to the Salt Deputy Collector during the storing season; and as each heap only contains ten garce of salt, as it is sold in the regular order of storage, and is liable at any time to be examined by any of the European District Officers, and by the Salt Deputy Collector, the chances of fraudulent storage escaping detection and of the fraud not being brought home to the delinquent after any lapse of time, are reduced to a minimum.

"Were the Bombay system, under which advances are made to the manufacturing ryots, introduced here, I imagine the old abandoned system of tuccavee (advance) would have to be revived, as without it, for a time at least, the manufacturers would find great difficulty in procuring sufficient capital to carry on their operations.

"If the manufacturers succumbed to pecuniary difficulties and lost control of their lands either by mortgage or otherwise, a class of substantial monopolists would probably take their place, whose interest it would be to combine and so keep up the price of perhaps inferior salt, at a disadvantage to consumers, and to the risk of the imperial revenue.

"Similarly in the case of European capitalists, if they compete alongside with Government, there would seem to be no margin for profit out of 2 annas 2½ pies, which may be taken as the average cost per maund throughout the District. The Pooree contractors clamour for two annas profit per maund.

"Should Government see fit to withdraw entirely in favour of European capitalists or Native monopolists, the price of salt would assuredly be raised in the absence of competition, (which ought to be the essence of the excise system), while at the same time the quality of the article would be matter of comparative indifference to the manufacturers, and there would be no certainty of an eighteen months' supply being permanently kept in store, as at present required.

"Whatever system may be determined upon, I think the present wholesome rule which requires an eighteen months' supply of salt to be in store, should be enforced. I am further of opinion that some guarantee should be required for the due realization of the imperial revenue, should the excise system be introduced."

Collector of South Arcot, (Mr. Garstin).—"Very fair salt is made at Merkanam, but nowhere else in this district. That made at Gundalam and at the other pans in the Gundalam division, even when of fair colour, is not good pure chloride of sodium. I think the manufacture might everywhere be improved and that the better salt would be appreciated by the people. Why the Merkanam salt is so much better than any other, I am not prepared to say, but I think that the difference in the process of manufacture has a good deal to do with it. The last conclusion arrived at by Dr. Ratton is that an 'abbreviated Merkanam' system is about the best that can be adopted for this part of the country. My own impression is that the Merkanam salt and all the other salts might be improved to a standard closely approximating to pure chloride of sodium by a reasonable initial expenditure in forming proper crystallizing beds. Therein, I believe, lies the whole secret of successful salt manufacture. Dr. Ratton and other authorities prove to us by the figured results of analyses that there is little or no difference between the sea-water off the coast of Brighton and that off Madras. It is therefore not a rash assumption that there is no great difference between the sea-water at any two points on the Coromandel coast, 30 miles apart. Consequently, if at 3° Beaumé (the normal strength of sea water), there is no difference, is there any difference between them when they reach 25° Beaumé? and if so, what is the reason? but if not, how is

it that at two points not more than 30 miles or so apart, namely, Merkanam and Gundalam, 25° Beaumé brine in evaporating gives, in one place good, and in the other bad salt? Surely, if both were evaporated in metal or glass pans the result would be the same, a really excellent salt; and if this be so, then the conclusion is inevitable that it is in the crystallizing beds, as at present in use, that the mischief is done and what might give pure salt is allowed to yield only a light and less wholesome salt, owing to a want of proper crystallizing beds impervious to percolation. Were these formed, the cost of them would soon be recovered by the much larger yield of heavier salt, and by the saving of all the time at present wasted in re-making the clay beds in use every time salt is scraped from them, which amounts in a six months' season to not much short of one-half of it. The cost of making these beds would no doubt be great, but I believe it would very quickly recoup itself, and that in this way it would eventually be found that the greatest saving in the cost of manufacture could be effected, owing to the greatly increased out-turn and its better quality, and with such a greatly increased out-turn of really pure salt, there would probably spring up an export trade with which Cheshire could not successfully compete, and if the excise system is introduced, its success will in a great measure depend on the existence and development of such a trade.

"I see no practical difficulty in the way of introducing the excise system into this district except the conventions with the French. If after the excise system is introduced the French Government chose to give us a year's notice and to abrogate the convention of 1818, they could do so, and would then under the convention of 1815, be able to resume manufacture for themselves subject to the condition that the British Government would have the exclusive right to purchase all the salt so made. If they did not withdraw from the convention of 1818 the Madras Government would have to purchase the salt required by the French and supply them as now."

Collector of Tinnevely, (Mr. Stuart).—"I do not think the system pursued can be said to be needlessly costly. Undoubtedly it is capable of improvement as a manufacturing system, and every improvement will slightly cheapen the cost. The weakest point is the character of the salt ryot, which is so conservative as to make improvements or experiments difficult, and the fact that he has such an interest in the pans that his prejudices must be consulted. A system of payment by out-turn, without any rights in the pans conceded to the salt ryot, would, if it could be substituted, leave officers much more free to institute and carry out experiments and improvements in the manufacture.

"Excise may mean importation of salt or it may mean private manufacture. As regards the first, I cannot but think it is more likely that, with the natural advantages of (1) intense sun power, (2) convenient salt creeks, (3) level plains with good clay soil and of large extent of no use for any other purpose and within easy reach of such salt creeks, we have conditions of manufacture here on the east coast of Southern India with which no country can compete, but of course, it is a question of price. If salt from the mines of Europe can be excavated where labour is expensive, and can be conveyed all the way to India and then distributed to all the numerous points along the coast where we manufacture it, and which, of course, greatly affects its cost of carriage to the consumer, if this can be done more cheaply than we can manufacture it, then, if it is clear that the supply will be permanent, and that it is not in the hands of a few persons who might monopolise the trade when once obtained, and then raise the price, we should do well to support importation of foreign salt; otherwise not. If private manufacture in India is meant, I see no objections to it, and as Collector of this district, am quite prepared with the consent of the Board to allow any private person of substance and respectability to try his hand at this business provided he pays for the guard required to watch him. I would require security in a considerable sum as a guarantee that there should be no smuggling, and fix heavy penalties on smuggling, to be recovered by forfeiture of security. Private manufacture *might* be made to pay I think, but I do not believe that for many years it *will*; still I would throw no obstacle in the way of any enterprising person who wants to try.

"I would not introduce the excise system in either form until I was satisfied that the results would be at least as satisfactory to the consumer as they are at present, and would keep up the present system of manufacture by Government for some time at all events, concurrently only charging the actual cost of manufacture, establishment, &c., as well as the excise duty on the salt manufactured, so that the private dealer would compete fairly with Government manufacture, then let him beat the Government out of the field if he can, and if he does, it will be by degrees, and the market will not be disturbed by sudden changes."

Collector of Coimbatore, (Mr. Wedderburn).—"I think that the Madras Government having to pay the difference between the guaranteed Railway interest and that of actual earnings, and being interested in a larger sale of salt, which means a cheaper salt, for carriage makes all the difference, should get the railway to carry salt at cheaper rates.

"The advantage to the people by cheap salt, is so immense both as regards health, comfort, and prosperity, that no consideration of parallel traffic rates with those obtaining in England should be allowed to stand in the way of a cheap diffusion of salt.

"It is a matter of indifference whether the revenue is collected on manufacture, or by excise, the main object is to get the salt to the people, who will prefer wholesome tasty sea salt, to earth solutions.

"I would have the carriage cost, so far as railways can further it, almost nominal.

"I do not think that the increased consumption of sea-salt by the reduction of carriage will need to be illustrated. Look at the increased consumption of everything else that can be afforded.

"I used to think thirty years ago that the natives of this country had a penchant for sleeping on the bare ground, and that tables and chairs were contrary to religious customs, but the observation of so many years has shewn that the poverty of the people only prevented their supplying themselves with the comforts of life, in which chairs, beds, and tables, are now included.

"So with salt, if it be made so cheap by reduction of carriage that it can be had pure without being too dear for the bulk of consumers, I do not think that adulteration will be so common as now. If as cheap as earth-salt, it would not pay to mix the latter with it.

"As for using it for any other purpose but human consumption, in an inland district none but the opulent can give their cattle sea-salt, and as for spreading such an article on land, it would be considered insanity.

"The price of salt at Madras is eighteen seers for the rupee, at Coimbatore connected by rail fourteen, or an increase of twenty-three per cent. Now it stands to reason that if the poor have twenty-three per cent. to pay more than their coast neighbours for salt, they will economise in it.

"It is an article the cost of manufacture of which is almost nominal, and it ought to be made as cheap as Government can make it to the bulk of their subjects.

"I would subsidise the railway; pay them for carrying the salt free. The cost will, in time, be more than paid by increased consumption.

"Even with this concession, there are the road cartage charges, which the distant inland consumer has to pay. These are so heavy as almost to preclude a free consumption; but Government cannot interfere with local cart traffic, they do not guarantee any interest thereon. The Collegal purchaser gets twelve measures, nearly thirty-two per cent dearer, for the rupee, while the Madras consumer gets eighteen measures. In addition to the rail, the salt has 100 miles of cartage.

"I would be in favour of a reduction of monopoly price in the first instance, a free passage by rail, in the second, and look to increased consumption as a possible financial, but to the good of the people, as a substantial reward for the sacrifice."

The reply of the Collector of Kurnool to paras. 9--11 of the Commission's circular was not received till the 12th July, too late to embody in the précis by subjects above given. It is therefore reproduced here.

"The large centres of wholesale trade for sea-salt together with the average wholesale prices obtaining at each of the centres are given in the subjoined statement:—

Name of Taluk.	Name of the large centre at which sea-salt is sold wholesale.	Average wholesale price of sea-salt at so many measures per Rupee.
Markapur	Markapur	10½
Cumbum	Cumbum	11½
Nandikotkur	Nandikotkur	11½
Ramalakota	Atmakur	From 10 to 11
Nandial	Nandikotkur	Do do
	Kurnool	Do 9 to 10
	Nandial	10½
	Bandiatmakur	Do
	Gadidemala	Do
	Betamcheruvu	Do
	Mahadevapuram	Do 9 to 10
	Rudravaram	Do do
	Koilkuntla	Do 10 to 11
	Cwka	Do do
	Nosam	Do do
	Tirumanayanipeta	Do do
	Patticoonda	10½
	Peapalli	Do
	Muddikera	Do

"There appears to be only one kind of sea-salt sold in this district.

"Sea-salt is brought into this District either from the Nellore District or from Madras. The salt from Nellore District enters this District via Dupadu in the Markapur Taluk and Obanayavipalli in the Cumbum Taluk. Madras salt enters via Chagalmarry in the Sirwell

taluk, Timmanayanipetta in the Koilkuntla taluk and Peapally in the Pattikonda taluk. It leaves this district at Kurnool for Hyderabad and at Billekallu in the Pattikonda taluk for the Bellary district.

"There are altogether seven lines of salt traffic in this district, two of these begin from Cuddapa, the third from Yerraguntla, the fourth from Tadpatri and the fifth from Gooty, the Railway stations on the north-western line, and the sixth and seventh from Dupadu in the Markapur taluk.

"The two lines from Cuddapa run as follows. The first passes by Chagalmarry, Rudravaram, and Mahadevapuram in the Sirwell taluk and joins at the latter place with the line from the Nellore district via Dupadu. The second runs along Chagalmarry and Nallagatta in the Sirwell taluk and Chabola and Nandial in the Nandial taluk into Kurnool. The third from Yerraguntla passes by Chagalmarry into Koilkuntla, and the fourth from Tadpatri runs into Koilkuntla by Timmanayanipetta in that taluk. The fifth from Gooty passes by Peapalli in the Pattikonda taluk and Veldurti in the Ramalakota taluk into Kurnool. The sixth and seventh run from Dupadu to Kurnool. One of these passes by Dupadu and Markapur in the Markapur taluk, Cumbum, Giddalur and Kristanasettipalli in the Cumbum taluk, Mahadevapuram in Sirwell taluk, and Gazulapalli and Nandial in the Nandial taluk, into Kurnool. The other line runs along Dupadu and Dornala in the Markapur taluk, Siddapuram, Atmakur and Nandikotkur in the Nandikotkur taluk into Kurnool. To Markapur, Cumbum, Bestarpetta, Atmakur and Nandikotkur, the large centres of wholesale salt trade on one of the lines from Dupadu, and to Mahadevapuram and Nandial on the other line, the lambadis or sukalis, bring sea-salt from the Nellore district on pack-bullocks which they keep in large numbers. Rudravaram, Koilkuntla, Timmanayanipetta and Peapalli which are large centres on the lines from the railway stations get Madras salt. Kurnool is a place where salt comes both from Nellore and Madras. Nandial and Mahadevapuram stations are also on the lines from the railway station and therefore they receive Madras salt as well. From Nandial there are two branch lines, one to Bethamcheruvu station and the other to Bandiatmakur and thence to Gadidemala. From Koilkuntla there are two lines, one to Owk and the other to Nossam. Pattikonda receives its supply from Gooty, from which there is direct road to the place. Maddikera, which is two miles from Nancherla station, receives its supply of Madras salt through that station.

"There is also a line from Ohanayanipalli to Cumbum. This is the line by which the sea-salt from the Nellore district comes into this district via Ongole. It does not appear that pack-bullocks are let on hire in this district, and the pack-bullocks used for the carriage of salt are the property of salt-dealers in most cases. Bandies are engaged to convey salt from different stations and the rate of hire paid is one Rupee for every 10 miles for 400 measures. The principal salt markets in this district are those given in the Statement appended to para. 2.

"The samples of salt sent from this district were of earth-salt manufactured in the district. The villages where the different kinds of earth-salt were produced and their distance from the stations for which they were sent are shown in the following Statement:—

Kinds of Earth-salt.	Villages in which manufactured.	Distance from the station from which it was purchased and sent.
1 Best... ..	Alaganur	10 miles from Nandikotkur
2 Average	Timmapuram	10 do from do
3 Bad	Guvvalakunta	...
1 Best... ..	Veldurti	5 do to Ramalakotta
2 Average	Yadaralla	3 do to do
3 Bad	Ratnapalli	...
1 Best... ..	Gudimitta	miles from Cumbum
2 Average		
3 Bad		
1 Best... ..	Yachavaram	3 do from Markapur
2 Average	Markapur	In the station itself
3 Bad	Jonpur	4 miles from Markapur
1 Best... ..	Konadedu	10 do from Nandial
2 Average	Kadmalakalra	8 do from do
3 Bad	Kanala	6 do from do
1 Best... ..	Mustialpadu	25 Miles from Sirwell
2 Average		
3 Bad		
1 Best... ..	Gorindinua	8 do from Koilkuntla
2 Average	Peddakoppur	5 do from do
3 Bad	Velgatur	3 do do
1 Best... ..	Peddakatti	4 do from Pattikonda
2 Average	Pattikonda	In the station itself
3 Bad	Dudikonda	5 miles from Pattikonda

"Generally the earth-salt manufacturers bring their salt on their own pack-bullocks to the principal stations and sell the same. But where any merchant goes to the village where salt is manufactured, he takes his own pack-bullocks, or engages a cart on the rate of hire or transport is at Rupee (1) per 10 miles per 400 or 440 measures."

PART II. *Results of analysis.* The steps taken to obtain analyses of specimens of salt are described in the body of the Report. The following is the letter of Dr. Hazlett, the officer deputed to aid us in that respect, submitting the results of his work.

Letter from Surgeon H. J. HAZLETT, Salt Analyst to the President of the Madras Salt Commission, dated Madras, 21st June 1876.

As I have completed the analysis of the samples of salt submitted to me for that purpose, I have the honour to forward the following brief report on the work done, referring especially to the process, the results, and the medical or sanitary aspect of the subject.

2. The analyses were divided into two headings:—A, or complete, for specimens from the platforms;—B, or less complete, for bazaar samples. Under the process.

A the following items were investigated:—

moisture,	magnesium chloride,
insoluble matter,	calcium chloride,
organic matter,	magnesium sulphate,
sodium chloride,	calcium sulphate.

Under B,

moisture, ditto. after two days' exposure to the air, insoluble matter, organic matter, sodium chloride.

3. The system of analysis that I followed, with the exception of a few minor details, is that described in Fresenius' Quantitative Analysis, sixth edition; and I used the metric system of weights and measures.

4. I did not estimate the amount of sodium sulphate, as it is a small, and, in my opinion, an unimportant constituent of sea-salt; its determination would have been very tedious, and have lessened considerably the number of analyses that I could have completed; besides I found that the sulphuric acid which I would have to employ in the process gave a deposit on evaporation, and would therefore have made the results incorrect.

5. In estimating the amount of moisture, I adopted the plan recommended by Fresenius, to heat gently over a lamp the salt contained in a small crucible within a larger one. This was done in order to avoid loss from decrepitation; by this means both the superficial moisture and the interstitial or the mechanically combined water were got rid of. I expect the heat employed for this purpose must have been sufficient to consume more or less of the organic matter, and cause an increase in the percentage of moisture. If we assume that all the organic matter was destroyed, this increase would be close on 0.15 per cent., calculating from 0.154, being the average of organic matter in each sample of salt, and that I usually took about eight grammes for determining the amount of moisture present; but, from what I observed, I believe that substance was only partially consumed, and I think 0.100 would be in excess of the error arising from this source. If I had used the ordinary water or steam-bath, the heat in my opinion would not have been sufficient to drive off completely the interstitial water, and the results would have been less satisfactory than by the process detailed above.

6. The insoluble residue was calculated from the amount of sand, &c., obtained from a known quantity of each sample dissolved in water, by collecting on a tared filter, which was dried and weighed.

7. I then incinerated the filter and its contents in a crucible, and the difference between the weight now obtained,—after allowing for the ash of the filter,—and that of the insoluble residue, I took as representing the organic matter.

8. I am aware that in water analyses, this method of estimating this substance has been very justly abandoned on account of its inaccuracy; but the principal objections raised against it would not apply to my using it for these analyses; for instance, there would not be loss of water from hydrated salts, or of acid from magnesium salts, and the error resulting from carbonate of lime losing its carbon di-oxide occurred in very few of the specimens. I also

found that the figures obtained by this method corresponded closely with those given by the permanganate of potash process; and, on the whole, I think the results are sufficiently accurate, and give as satisfactory information as would have been afforded by other systems, which would have required greater expenditure of time to execute them.

9. Sodium chloride should come next, according to its position on the list, for consideration, but in the course of analysis it is last computed, so I will assign it the latter position.

10. Before proceeding further, I may as well mention that in all the calculations the salts were reckoned as being in the anhydrous condition, and also that the combinations between metals and acids were based upon their atomic weights and quantivalence.

11. I estimated the different remaining substances contained in salt in the following order;—sulphuric acid, calcium, magnesium, chlorine.

12. If there was more sulphuric acid than was required to combine with the calcium to form calcium sulphate, the excess was united with the magnesium to form magnesium sulphate, but if the calcium exceeded proportionally the sulphuric acid, the surplus was joined with some of the chlorine to form calcium chloride. The remaining magnesium was converted into magnesium chloride, and the chlorine, less deductions, was reckoned out in terms of sodium chloride. This plan of combining these bases and acids together is to a great extent arbitrary, but is the one usually in vogue, and, I think, affords more information than if the results were represented in the form of constituent metals and acid-radicals, as is given in some books and preferred by many chemists.

13. The quantity of sulphuric acid present in each specimen was computed from the amount of barium sulphate obtained by adding a solution of barium chloride to a hot, acidified, measured quantity of each sample dissolved in water. The precipitate was collected on a filter, dried and incinerated. From the barium sulphate obtained, the sulphuric acid, or more correctly sulphuric radical, could be calculated as follows:—

let y be the barium sulphate; then sulphuric radical ($\text{SO}_4 = 96$) $= y \times \frac{96 (\text{SO}_4)}{233 (\text{BaSO}_4)}$
 $y \times 0.412$; the amount of salt originally taken being known, a rule of three sum gave the percentage.

14. In estimating calcium I followed the plan usually adopted of precipitating it in the form of calcium oxalate, and converting it by the aid of heat into calcium oxide or carbonate. In every case I dissolved and re-precipitated the oxalate in order to get rid of any co-precipitated magnesium. The following calculation will give the amount of calcium in the carbonate;—

let m = the amount of calcium carbonate;—
 then the calcium $= \frac{m (\text{Ca}) 40}{(\text{CaCO}_3) 100} = m \times 0.4$. To convert calcium oxide (CaO) into calcium;—
 let $y = \text{CaO}$; then $\text{Ca} = y \times \frac{(\text{Ca}) 40}{(\text{CaO}) 56} = y \times \frac{5}{7}$.

15. The magnesium was precipitated in the form of phosphate of ammonium and magnesium, left 24 hours to settle, (as was also done in the case of the sulphuric acid and the calcium), then heated gradually, until it changed into magnesium pyrophosphate, and, from the weight of the latter obtained, the amount of magnesium was calculated as follows;—

let x = magnesium pyrophosphate ($\text{Mg}_2 \text{P}_2 \text{O}_7$);
 then magnesium $= x \times \frac{(\text{Mg}_2) 48}{(\text{Mg}_2 \text{P}_2 \text{O}_7) 222}$
 $= x \times 0.216216$.

16. For estimating the chlorine I employed the usual silver nitrate solution, using chromate of potash as the indicator. I dissolved one-tenth of an equivalent, (17 grammes), of silver nitrate in one litre of distilled water, consequently each C. C. would contain 0.017 grammes of the silver salt, and correspond to 0.00355 of chlorine, or 0.00585 of sodium chloride. In order to find the amount of either of the two latter in any specimen, it was necessary only to multiply the number of C. C. of silver solution used for a known weight by whichever of the two

equivalents corresponded to the substance sought. In A analyses, I always first found the amount of chlorine, deducted any that had been required for magnesium or calcium or both, and then what remained was calculated out in terms of sodium chloride. On the other hand in B analyses, the chlorine was not computed, the number of silver solution C. C. used was multiplied by 0.00585, which gave the amount of chlorine present in terms of sodium chloride; consequently in these specimens this constituent is represented too high, as no allowances were made for the chlorine combined with either of the other bases. Assuming the three chlorides to be present in the same proportion in these specimens as in the average of those completely analyzed, this correction would amount to a deduction of 3.343 per cent. As, however, the bazaar specimens would naturally be somewhat older than those received direct from the platforms, they would contain a smaller proportion of the chlorides of magnesium and calcium than the latter, and in consequence the above correction is probably greater than the results of complete analysis would show. For the purpose of arriving roughly at the amount of chloride of sodium in any of the bazaar specimens, I consider that two and three quarters parts is an approximate estimate of what might be deducted.

17. In combining the results of the analysis of earth-salts, a difficulty arose in the quantity of sulphuric acid present in most of the specimens; this was due to sulphate of soda, but for reasons mentioned in the commencement of this report, I did not estimate its amount. In three specimens,—Bellary, Bellary; Bellary, Hospett; and Kurnool, Pedda Hulti;—I calculated out the results according to the usual plan, as the sulphuric acid was of about the amount found in other specimens of salt; but in the remainder this constituent was in excess, so I reckoned the surplus above what was required to combine with the calcium, as sodium sulphate. I think there are fewer objections to this method than if I had pursued the old plan, for in the latter case all the magnesium would have been represented in the form of sulphate, which I consider would be incorrect; and in the uncertainty as to how much sulphuric acid should be apportioned relatively to these two bases, magnesium and sodium, I thought the composition of these salts would be more correctly represented, by combining it with the latter of the two. The results of course are only approximately correct. I tested all for nitrates; in only one,—Cuddapah, Tiruvengalampuram,—was their presence indicated.

18. Fifty-nine specimens were analysed according to heading A; viz., a complete analysis. Of these forty-one were manufactured salts from the various platforms, one was a spontaneous salt from Vedaranyam, one a specimen taken fresh from a pan at Porto Novo, nine were earth-salts, four were from the salt stores on the west coast, one was an unripe specimen of salt from Konada, one from the Chilka Lake, and one from Bombay.

19. The following table gives the result of the mean of the analysis of the forty-one Platform specimens. specimens of platform salts;—

Moisture.	Insoluble matter.		Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.
	Inorganic.	Organic.					
9.281	1.730	.156	84.839	2.233	.185	.399	1.315

20. Of those not included one was a sample sent from the Porto Novo pans by Dr. Ratton; its composition is given in the next table;—

Moisture.	Insoluble matter.		Sodium chloride.	Magnesium chloride.	Calcium chloride.	Magnesium sulphate.	Calcium sulphate.
	Inorganic.	Organic.					
10.968	0.134	0.154	86.374	.2701	0.376	0	0.753

21. Sixty-seven bazaar specimens were examined according to heading B; viz., incomplete analysis. Of these forty-eight were done by Mr. Duarte, (formerly of the Assay Department), who was sent to assist me for

two months. He performed his work most creditably and efficiently. The average of these B specimens is herewith shown;—

Moisture.		Insoluble matter.		Total chlorine reckoned in terms of sodium chloride.	Probable amount of sodium chloride.
When received.	After exposure to the air for two days.	Inorganic.	Organic.		
8.379	8.443	2.346	.266	86.212	83.330

22. In accordance with the wishes of the Commission, I subjected five of the platform samples to what is known as the Nessler test for ammonia or Wanklyn's process. In each of the five specimens, 5 grammes were taken, but the results are given as so much per cent. The free and albuminoid ammonia are represented in parts of a milligramme.

Districts.	Ammonia.	
	Free.	Albumi-noid.
Kanuparti, Nellore...	.00080	.00320
Vayalur, Chingleput	.00240	.00280
Cheyur Do.	.00083	.00070
Gundalam, South Arcot	.00010	.00320
Negapatam, Tanjore	.00132	.00270

The information afforded by this process is not, in my opinion, reliable, as it is impossible to tell how much of the nitrogen of the organic matter was converted into ammonia. If this test had been used for every specimen, it would have given means of comparison, but would not have thrown any light on the properties of the organic matter. In water analysis, it affords data by which a very fair estimate can be formed of its merits or demerits for drinking purposes; but it is used more on account of its simplicity than its accuracy. It could also be employed in computing the ammonia evolved from substances of known composition, although even in these cases the amount is usually only proportional to the nitrogen present, which is frequently but partially converted into ammonia.

23. The consideration of the relative purity of the specimens from the different pans, should not, in my opinion, be included in my report, but I may refer to the Porto Novo salt as shewing a marked improvement when compared with other Madras samples, if it be taken into consideration that it had only been removed a few days from the pans when I analysed it. The percentage of moisture which it contains, is high, but I expect both it and the magnesium chloride, would diminish to the extent of one-half or two-thirds their amount if the salt was allowed to drain for some time. In order to make a fair comparison between any specimens of sea-salt, they should be of the same age, reckoning from the day they left the pans.

24. In bazaar salts especially, the colour, in my opinion, cannot be taken as an estimate of their purity, for many very dirty-looking samples contain a much higher percentage of sodium chloride than others which in appearance look much better; in fact dirt may be taken as a sign of age in shop specimens, and the older the salt, the less moisture and chance of wastage. I consider also that the size of the crystals does not give reliable information with respect to the quality of salt; it is a sign of slow formation. This, one would think, would reduce the quantity of bittern salts, but in these analyses, this opinion was not borne out by the results, for, taken on the whole, the largely crystallized specimens did not shew any decided superiority over those of smaller formation. The moisture exhibits a slight increase under heading "air-dried," but I consider the results do not afford reliable information, for the amount of this ingredient would depend chiefly upon the age of each specimen, and also to a considerable extent upon whether land or sea-breezes were most prevalent at the time each sample was exposed to their influences.

25. On account of H. E. Falk, Esq., President of the Salt Chamber of Commerce of Cheshire, having brought some very sweeping charges against Madras salt with reference to its injurious effects as an article of diet, I have thought it advisable for me to make some reference to them in this report, although I have little to add beyond the refutation of those statements contained in Dr. Rattray's letter of the 15th September 1875, to the Acting Sub-Secretary to the Board of Revenue, Madras.

26. The moisture comes first on the list for consideration; but I may pass it over without further comment, as no special properties can be attributed to it from a medical point of view.

27. The insoluble inorganic matter present is certainly large, especially in bazaar specimens, but it is impossible that it could be otherwise, when one takes into consideration the way salt is exposed for sale in the bazaars, whereby it must become impregnated largely with sand and dust. Even if these impurities could be avoided, I doubt if the natives would like the salt better, judging from the standard by which they decide the merits of water for drinking purposes. The sand, (silica), and the clay, (silicate of alumina), which constitute nearly the whole of the insoluble residue, cannot fulfil any useful purpose that I am aware of, but perhaps the trace of iron which all bazaar specimens that I examined contain may be of use, as it is not unreasonable to suppose that in the presence of salt it may exist as—or in the process of digestion, be converted into—chloride of iron, in which condition it is easily absorbed, and would act as a tonic.

28. The organic matter is much more abundant in bazaar than in platform specimens, the excess being chiefly or entirely due to pieces of leaves and other vegetable substances; but in newly made salt the organic matter arises from the presence of a confervoid growth, which, I believe, is found in all or nearly all the salt pans. We have no reason for supposing that this low form of vegetable life can have any special injurious properties, and nothing can be more problematical than the statement of the President of the Cheshire Salt Chamber of Commerce, that "the organic matter which becomes an ingredient of the salt must also in times of cholera and other epidemics, widely spread the contagion." If such is the case, Madras should suffer more from these forms of diseases than either Bengal or Bombay, but in reality it does not, and contrasts favourably in this respect with the rest of India; although it is situated unfortunately as regards cholera foci, having Pooree to the north and Ceylon to the south. As Mr. Falk has adduced nothing to substantiate the views he has promulgated about the properties of the organic matter in Madras salt, I am compelled to regard his assertions as being unsupported by facts, and untenable even in theory.

29. The remaining constituents of salt—after sodium chloride—I may as well combine under the head of bittern salts, especially as Mr. Falk has alluded to them under that designation, and he describes them as possessing "positively injurious qualities," and asserts that "they to an unparalleled degree, must cause skin diseases and irritations of the mucous membranes." Here again I cannot agree with him, for the same reason I mentioned before with reference to his statements about cholera, namely, that I am not aware that the inhabitants of the Madras Presidency are especially afflicted in the matter of diseases of their skins, and in my short experience I have not noticed that a larger proportion of them suffer from these complaints than do the people at home. Scabies or itch is, I believe, more common in this country, but no one could attribute its prevalence to the use of any saline product. I know, many theories have been started to account for certain diseases being more predominant on or near the coast, and I think freshly made salt has been suggested as one of the causes; but this is merely speculation, there is no evidence to support it, and there are other causes which could, with far more justice, be selected as the source. With respect to diseases of the mucous membrane, they depend chiefly upon the climate; in tropical countries the alimentary is attacked whilst in cold or temperate regions that lining the pharyngeal and respiratory tracts is more subject to disease. If these bittern salts are so injurious as Mr. Falk tries to make out, it is strange that some of the most highly commended spas on the continent of Europe contain them largely.

30. As regards Epsom salts or magnesium sulphate, if we take 12 lbs. as the average consumption of salt per head for a year, and accept the analyses I have made as a guide, we shall find that the amount (average) taken by each individual in the twelve months would be a little in excess of 0.75 of an ounce; this could not possibly have any injurious effects; and, even if the annual consumption reached ten or twenty times that quantity, it would still be undeserving of the term "poisonous" as applied by Mr. Falk to Madras salt when referring especially to magnesium and

sodium sulphates; and as the latter (Glauber's salts) is present in a much less degree (or not at all), this expression was even more unjustifiable and inapplicable in reference to it.

31. In some of the earth-salts, sodium sulphate is present to such an extent that they must, I expect, have purgative properties, but this would probably be nullified by the immunity resulting from habitual use. In two bazaar specimens I found this impurity to a considerable extent; one was from Cuddapah, Gangapuram; the other from Chingleput, Conjeveram.

32. The calcium sulphate scarcely requires any notice, for on account of its almost total insolubility it could have but little influence for good or evil in the small proportion that it is found in salt. In a few specimens it was rather plentiful, notably in a sample from Kundapur, Ernad; in which it gave a percentage of 2.215, and was also present to a considerable extent in the insoluble residue in the form of gypsum. This amount may be harmless, but it is not recommendable.

33. As the result of my experiences in this inquiry, I am of opinion that many unfounded and speculative accusations have been brought against Madras salt; its quality could be improved as is being done by Dr. Ratton; and by more careful manufacture, I believe unnecessary ingredients, such as the moisture, and the organic matter, might be considerably reduced, and I think it would be desirable, if possible, to entirely get rid of the latter of the two; I examined some of it under a microscope, and found it consisted of masses of greenish-tinged vesicular-looking matter, (*confervae*?), and in addition there were other forms, some of which I recognized as follows;—*Conferva floccosa*, diatoms, zoospores, &c. I am not sufficiently well acquainted with the subject to form an opinion as to what would be the probable effects of these low forms of vegetable life on the human body, but I believe the evidence on this point is chiefly negative, for even rain water contains algal vesicles. The insoluble residue and the extra organic matter in bazaar salts are irremediable. The bitter salts may fulfil some useful purpose when taken into the system, but as two of them, magnesium chloride and calcium chloride, are deliquescent and render salt moist, their presence on that account is undesirable.

The following Tables shew the results of the analyses, (both A & B), as also the physical characteristics of the various salts, as observed in the several specimens obtained.

Analyses and description of specimens of salt from salt-works and salt stor

District.	Name of salt work.	Source of brine supply.*	CHEMICAL ANALYSES.										PHYSICAL QUALITIES OF		
			Moisture.	Insoluble matter.		Sodium Chloride.	Magnesium Chloride.	Calcium Chloride.	Magnesium Sulphate.	Calcium Sulphate.	Unaccounted for.	Regularity.	Size.	Translucency.	
				Inor-ganic.	Orga-nic.										
Ganjam.	Ganjam.....	T	6.712	.783	.060	89.137	1.873	.380	...	1.196	+ .142	Irregular.	Inches. 2 to very small.	Opaque.	
	Ichapur.....	T	...	...	...	...	...	...	...	...	...	Very irregular.	3 to 1.	Opaque.	
	Naupada.....	B	11.762	1.000	.143	81.943	2.815	...	1.027	1.214	-.096	Irregular.	4 to 1.	Opaque.	
	Womeravilli.....	T	...	...	...	...	...	...	...	...	...	Irregular.	3 to 1.	Opaque.	
	Mahfuzbandar.....	...	No specimen sent.	...	...	...	...	...	...	...	...	...	...	...	
Vizagapatam.	Kuppili.....	B	...	...	...	...	...	...	...	...	...	Regular.	25 to 1.	Opaque.	
	Konada.....	T	...	...	...	...	...	...	...	...	...	Very irregular.	3 to 1.	Opaque.	
	Bindipatam.....	B	...	...	...	...	...	...	...	...	...	Very irregular.	2 to .05.	Opaque.	
	Karasa.....	T	9.688	.835	.016	86.124	2.507	...	.225	1.139	+ .034	Very irregular.	3 to 1.	Opaque.	
	Balacheraavu.....	S. P.	10.155	.356	.065	86.623	2.102	...	.174	.765	+ .240	Irregular.	3 to 2.	Opaque.	
Godavery.	Pentakotta.....	B	...	...	...	...	...	...	...	...	...	Regular.	2 to very small.	Opaque.	
	Pennuguduru.....	T	14.434	.978	.170	79.307	3.705	.352	...	1.338	+ .340	Irregular.	2 to very small.	Opaque.	
	Mogaltur.....	T	...	...	...	...	...	...	...	...	...	Very irregular.	2 to very small.	Opaque.	
	Panduraka.....	S	No specimen sent.	...	...	(spontaneous salt.)	...	...	...	...	...	...	...	...	
	Manginapudi.....	P	11.909	2.203	.033	82.433	1.466	...	1.015	.834	+ .033	Very irregular, much broken.	3 to very small.	Opaque.	
Kistna.	Nizampatam.....	B. P.	...	...	...	...	...	...	...	...	...	Irregular.	4 to very small.	Opaque.	
	Chinna Ganjam.....	P	3.987	2.579	.299	90.538	1.193	.122	...	1.496	+ .214	Very irregular.	25 to 1.	Opaque.	
	Kanuparti.....	P	13.139	.968	.405	82.338	2.523	.519	...	.455	+ .347	Irregular.	4 to 2.	Opaque.	
	Padarti.....	B	8.056	1.815	.150	86.535	1.848	.611	...	1.633	+ .698	Very irregular.	4 to 1.	Opaque.	
	Pakala.....	P	...	...	...	...	...	...	...	...	...	Very irregular.	4 to 2.	Opaque.	
Nellore.	Tammalapenta.....	P	...	...	...	...	...	...	...	...	...	Regular.	25 to very small.	Slightly opaque.	
	Iskapalli.....	B	8.038	.623	.033	89.396	1.038	...	.816	.119	+ .118	Slightly irregular.	5 to 1.	Opaque.	
	Gogalapalli.....	B	No specimen sent.	...	...	...	...	...	...	...	...	...	...	...	
	Krishnapatam.....	P	14.016	.753	.032	81.071	2.637	...	.321	1.649	+ .479	Very irregular.	3 to 1.	Opaque.	
	Dugarazpatam.....	B	...	...	...	...	...	...	...	...	...	Irregular.	3 to very small.	Opaque.	
Chingleput.	Sannapugunta.....	B	...	...	...	...	...	...	...	...	...	Regular.	25 to 1.	Opaque.	
	Tada.....	P. B.	...	...	...	...	...	...	...	...	...	Regular.	3 to 1.	Opaque.	
	Kattur.....	B	Best... 9.467 Aver... 7.920 Worst 7.584	Best... 1.048 Aver... 1.514 Worst 1.773	Best... .029 Aver... .160 Worst .142	Best... 84.675 Aver... 86.712 Worst 87.272	Best... 2.977 Aver... 2.266 Worst 1.811	Best... .362 Aver... .527 Worst .781	Best... 1.366 Aver... .850 Worst .952	Best... -.082 Aver... -.041 Worst + .315	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst
	Vayalur.....	B	Best... 13.341 Aver... 6.223 Worst 9.885	Best... 1.972 Aver... 2.406 Worst 2.152	Best... a trace Aver... .243 Worst .224	Best... 80.228 Aver... 87.272 Worst 83.165	Best... 2.781 Aver... .861 Worst 2.296	Best... .863 Aver... 1.165 Worst .693	Best... 1.020 Aver... 1.183 Worst 1.577	Best... + .205 Aver... + .053 Worst -.008	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst
	Paridiwak.....	B	Best... 8.264 Aver... 5.231 Worst 5.507	Best... 3.494 Aver... 1.912 Worst 2.928	Best... .114 Aver... .143 Worst .331	Best... 83.943 Aver... 85.721 Worst 88.133	Best... 2.909 Aver... 1.402 Worst 1.537	Best... .213 Aver... 1.111 Worst .074	Best... 1.536 Aver... 1.101 Worst 1.258	Best... + .413 Aver... -.372 Worst -.180	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst
Chingleput.	Attipat.....	B	Best... 8.552 Aver... 10.085 Worst 9.618	Best... .262 Aver... 1.320 Worst 1.518	Best... .090 Aver... .072 Worst .140	Best... 87.108 Aver... 83.358 Worst 83.642	Best... 2.182 Aver... 3.055 Worst 2.384	Best... .041 Aver... .529 Worst .962	Best... 1.649 Aver... 1.360 Worst .748	Best... + .470 Aver... -.375 Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst
	Vallur.....	B	Best... 6.312 Aver... 8.248 Worst 5.145	Best... 1.516 Aver... 1.336 Worst 2.382	Best... .251 Aver... .066 Worst .015	Best... 88.634 Aver... 86.570 Worst 89.348	Best... 1.656 Aver... 2.604 Worst 1.147	Best... .426 Aver... .415 Worst .977	Best... 1.210 Aver... 1.190 Worst .748	Best... + .035 Aver... + .429 Worst + .262	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst	Best... Aver... Worst
	Vadasemmanjeri or Home's Garden depot.....	B	...	...	...	...	...	...	...	...	...	Irregular.	2 to very small.	Opaque.	
	Covelong.....	B. P.	...	...	...	...	...	...	...	...	...	Very irregular.	25 to very small.	Opaque.	
	Cheyur.....	B. P.	10.811	1.497	.321	83.168	2.294	...	.181	1.366	-.162	Very irregular.	6 to very small.	Opaque.	

* S. Sea-water.

T. Tidal river or creek.

B. Backwater.

P. Brine-pits or brine-wells.

in the Madras Presidency.

THE SALT CRYSTALS.						REMARKS.
Colour.	Solidity of form.	Cohesion.	Dryness.	Weight per c. f. in oz.	Impurities visible.	
Very pale brown.	Slightly hollow.	Easily broken.	Slightly moist.	740	None.	The Ganjam salts are very uniform in appearance but they vary a little in colour and size of crystal. In the specimens received the best and worst do not differ much from the average. The best salt with regard to colour and size of crystal is from Naupada. The worst in size is from Ichapur.
Pale dirty white.	Slightly hollow.	Fair.	Slightly moist.	824	None.	
Nearly white.	Solid.	Fair.	Dry.	772	None.	
Very pale brown.	Slightly hollow.	Easily broken.	Moist.	723	None.	
White.	Slightly hollow.	Easily broken.	Very moist.	732	None.	
White.	Hollow.	Fair.	Moist.	756	None.	The Vizagapatam salts are tolerably uniform in colour, but vary in size. The best specimens have somewhat larger crystals than the average, and the worst smaller. The best looking salt is from Balacheraavu. It has well formed crystals of large size, some of them measuring 7 of an inch in diameter but they break easily. This specimen may be composed of selected crystals, as we observed no heaps with such large crystals during our visit to the pans. The worst salt in size and colour is from Karasa.
Pale dirty white.	Hollow.	Easily broken.	Very moist.	812	None.	
Very light brown.	Hollow.	Fair.	Very moist.	816	None.	
White.	Hollow.	Fair.	Slightly moist.	736	None.	
White.	Slightly hollow.	Fair.	Moist.	732	None.	
Dirty white.	Hollow.	Easily broken.	Very moist.	724	None.	In the Godavery district the best salts do not differ from the average in any perceptible way, but the best differ from the worst in being somewhat lighter in color and having none of the earth stains which occur on the worst.
Dirty white.	Hollow.	Fair.	Very moist.	816	None.	
Dirty white.	Solid.	Good.	Moist.	828	Traces of sand on crystals.	
Dirty white.	Solid.	Easily broken.	Moist.	756	None.	
Pale dirty white.	Solid.	Very good.	Dry.	792	None.	
Pale dirty white.	Solid.	Very good.	Very slightly moist.	708	None.	In the Nellore salts, the best differ from the average in having slightly larger crystals, being somewhat purer in colour, and having very little small-grained salt in admixture, whilst the worst differs from the average only in having smaller crystals. The specimens shew different shades of white, except those from Padarti and Pakala which are of a paler reddish tinge due probably to the silt of the red laterite soil. The best looking salt is from Iskapilli, the worst in point of colour is from Padarti.
Very pale red.	Slightly hollow.	Fair.	Very slightly moist.	752	None.	
Very pale red.	Hollow.	Fair.	Slightly moist.	679	None.	
White.	Very slightly hollow.	Easily broken.	Moist.	740	None.	
White.	Hollow.	Easily broken.	Moist.	752	None.	
White.	Hollow.	Very easily broken.	Very moist.	692	None.	In the Chingleput district all the salts with the exception of Cheyur have very small crystals of different shades of white. The best specimens differ from the average in having whilst the worst have smaller crystals. The best size and color is from Attipat, the worst from Kattur.
White.	Hollow.	Easily broken.	Very moist.	724	None.	
Very pale reddish.	Slightly hollow.	Very easily broken.	Very moist.	712	None.	
White.	Slightly hollow.	Very easily broken.	Very moist.	860	None.	
White.	Slightly hollow.	Easily broken.	Slightly moist.	728	None.	
Pale dirty white.	Hollow.	Fair.	Slightly moist.	780	Fine sand on crystals.	
Dirty white.	Slightly hollow.	Easily broken.	Very moist.	776	Fine sand on crystals.	
Pale dirty white.	Hollow.	Easily broken.	Very moist.	728	None.	
Pale dirty white.	Slightly hollow.	Easily broken.	Slightly moist.	700	Fine sand on crystals.	
Pale dirty white.	Slightly hollow.	Easily broken.	Very moist.	748	None.	
Dirty white.	Very hollow.	Easily broken.	Very moist.	756	None.	
White.	Solid.	Easily broken.	Very moist.	824	None.	

Analyses and description of specimens of salt from salt-works and salt stores

District.	Name of Salt work.	Source of brine supply.	CHEMICAL ANALYSES.										PHYSICAL QUALITIES OF		
			Moisture.	Insoluble matter.		Sodium Chloride.	Magnesium Chloride.	Calcium Chloride.	Magnesium Sulphate.	Calcium Sulphate.	Unaccounted for.	Regularity.	Size.	Translucency.	
				Inor-ganic.	Orga-nic.										
S. Arcot.	Merkanam	B	10.859	1.473	.123	81.125	3.387	.735	...	2.398	+ .050	Irregular, in lumps.	3 to very small.	Opaque.	
	Gundalam	T. P.	...	...	...	...	...	...	...	...	...	Regular.	15 to very small.	Opaque.	
Tanjore.	Naidavasal	P	12.578	6.491	.224	74.635	3.542	.533	...	2.065	-.022	Regular.	1 to very small.	Opaque.	
	Tranquebar ex Chandrapadi.....	P. T.	...	...	...	...	...	...	...	...	...	Regular.	2 to very small.	Opaque.	
	Negapatam	P	11.038	5.130	.541	77.817	2.839	...	.417	2.431	+ .213	Regular.	15 to very small.	Opaque.	
	Vedaranyam (pan)...	P	11.543 10.362	.735 2.717	.183 1.63	83.148 81.212	3.020 2.854	.250 .022	...	1.634 2.071	+ .545 -.525	Regular.	1 to very small.	Opaque.	
	Tambikakotta	P. S.	...	...	...	...	...	...	...	...	...	Regular.	35 to very small.	Opaque.	
	Adramapatam	S	11.591	1.975	.200	83.877	1.719	...	1.017	.782	+ 1.161	Very regular.	4 to 1.	Opaque.	
	Kattamayadi	S	...	...	...	...	...	...	...	...	...	Very regular.	3 to small.	Opaque.	
	Arasanagiri	S	10.611	2.034	.038	84.446	1.732	...	.483	.666	+ .067	Regular.	3 to very small.	Opaque.	
	Madurai.	Vattanam	B	...	...	...	...	...	...	...	...	...	Very irregular.	2 to very small.	Opaque.
Vairavanadapatam...		S. P.	...	...	...	...	...	...	...	...	...	Very irregular.	2 to very small.	Opaque.	
Attankarai		P	...	...	...	...	...	...	...	...	...	Very irregular.	2 to very small.	Opaque.	
Morekolam		T	7.121	.782	.020	88.709	1.659	1.037	...	1.091	+ .419	Very irregular.	2 to very small.	Opaque.	
Mutturahunadapatam		P	6.227	.762	.124	89.822	1.440	.513	...	1.290	+ .178	Regular.	15 to very small.	Opaque.	
Tinnevely.		Vaipar	P. S.	...	...	...	...	...	...	...	...	...	Regular.	3 to 1.	Opaque.
	Arasadi.....	S	9.672	.578	.084	85.165	2.810	...	.386	1.751	+ .426	Regular.	2 to very small.	Opaque.	
	Karapad (Tuticorin)	P. S.	10.197	.701	.096	85.098	2.163	...	1.137	.739	+ .121	Irregular.	25 to very small.	Opaque.	
	Sivandakolam	S	4.794	.978	.038	90.264	1.141	.767	...	1.138	-.130	Irregular.	1 to very small.	Opaque.	
	Levingepuram.....	P	...	...	...	...	...	...	...	...	...	Irregular.	25 to very small.	Opaque.	
	Coilpatam.....	P. T.	12.796	.683	.029	79.930	4.502	...	.265	2.618	+ .323	Regular.	2 to very small.	Opaque.	
	Kuttanguli	T. P.	...	...	...	...	...	...	...	...	...	Irregular.	1 to very small.	Opaque.	
	Viziapatti.....	T. P.	...	...	...	...	...	...	...	...	...	Irregular.	15 to very small.	Opaque.	
South Canara.	Kundapur (Hurnad).....	T	3.400	3.233	.394	87.506	.898	1.403	...	2.215	-.351	Regular.	2 to very small.	Opaque.	
	ali	T	...	...	...	...	...	...	...	...	...	Regular.	2 to very small.	Opaque.	
	Arhobli	T	...	...	...	...	...	...	...	...	...	Irregular.	2 to very small.	Opaque.	
Tanjore. S. Arcot.	Average.....	...	9.281	1.730	.156	84.839	2.233	.185	.399	1.315	+ .138				
	Pan salt containing most sodium chloride.	...	4.794	.978	.068	90.964	1.141	.767	...	1.138	-.130				
	Pan salt containing least sodium chloride.	...	12.578	6.491	.224	74.635	3.542	.533	...	2.065	-.022				
	Porto Novo	T	10.968	.134	.154	86.374	1.270	.376	...	.753	+ .029	Regular.	25 to 1.	Nearly translucent.	
	Vedaranyam (spontaneous)	S	4.177	.612	.106	93.696	.043	.968	...	.598	+ .200	Irregular lumps.	...	Opaque.	

In the Madras Presidency—(continued).

THE SALT CRYSTALS.						REMARKS.
Colour.	Solidity of form.	Cohesion.	Dryness.	Weight per c. f. in oz.	Impurities visible.	
Pale dirty white.	Solid.	Easily broken.	Moist.	712	None.	In South Arcot the best specimen sent from Merkanam is whiter and larger than the average, the worst is smaller and darker in colour. In the three specimens from Gundalam there is no apparent difference in size or colour. The best looking salt is from Merkanam, the worst from Gundalam.
Pale dirty white.	Very hollow.	Easily broken.	Very moist.	652	None.	
Very dirty white.	Hollow.	Easily broken.	Very moist.	703	Fine sand.	In Tanjore the salts vary from pure white to very dirty white, and in the best specimens the crystals in some cases are larger than those in the average specimens, but generally the three sets of salt are about equal with regard to size and colour. The worst specimens show in some instances a larger proportion of fine salt than the others. The best salt is from Kattamayadi. The darkest and smallest-grained salt is from the brine-wells of Negapatam.
Very dirty white.	Slightly hollow.	Very easily broken.	Very moist.	698	None.	
Dark dirty white.	Hollow.	Very easily broken.	Very moist.	756	Fine sand.	
Dirty white.	Slightly hollow.	Easily broken.	Very moist.	700	None.	
Dirty white.	Slightly hollow.	Easily broken.	Moist.	792	None.	
Pale dirty white.	Nearly solid.	Easily broken.	Very moist.	832	None.	
Pure white.	Nearly solid.	Easily broken.	Slightly moist.	809	None.	
White.	Solid.	Very easily broken.	Very moist.	844	None.	
White.	Slightly hollow.	Easily broken.	Very moist.	756	None.	The Madurai salts are all good in colour, but small in size of crystals, in which latter respect the specimens received are very uniform. The best looking salt with regard to size and colour is from Vattanam, the worst from Vairavanadapatam.
White.	Nearly solid.	Easily broken.	Slightly moist.	792	None.	
White.	Solid.	Fair.	Very moist.	832	None.	
White.	Slightly hollow.	Fair.	Slightly moist.	764	None.	In the Tinnevely district, the best and worst differ from the average in having respectively larger and smaller crystals. All the specimens are pure in colour. The best with regard to size and formation of crystal is from Arasadi, the worst from Sivandakolam.
White.	Slightly hollow.	Good.	Slightly moist.	820	None.	
White.	Slightly hollow.	Easily broken.	Moist.	820	None.	
White.	Slightly hollow.	Easily broken.	Very moist.	800	None.	
White.	Slightly hollow.	Easily broken.	Very moist.	800	None.	
White.	Solid.	Easily broken.	Very moist.	784	None.	
White.	Slightly hollow.	Easily broken.	Very moist.	752	None.	
White.	Hollow.	Very easily broken.	Very moist.	688	None.	
White.	Solid.	Easily broken.	Very moist.	736	None.	Three specimens were received from South Canara. They are all very dark in colour, owing to the presence of brown earth adhering to the crystals, and the crystals are small and very hollow.
White.	Solid.	Very easily broken.	Very moist.	776	None.	
Very dark brown.	Extremely hollow.	Very easily broken.	Dry.	665	Covered with fine brown sand.	
Very dirty brown.	Extremely hollow.	Very easily broken.	Dry.	636	Covered with fine sand.	This salt was taken fresh from a permanent pan and was very moist.
Very dark brown.	Very hollow.	Very easily broken.	Very slightly moist.	696	Covered with fine sand.	
Pure white.	Solid.	Easily broken.	Excessively moist.	792	None.	This salt is procured in pure white lumps and shows no distinct crystals.
Pure white.	Solid.	Very good.	Dry.	709	None.	

Analyses and description of specimens salts from salt-works and salt-stores

District.	Name of Salt Store.	CHEMICAL ANALYSES.									PHYSICAL QUALITIES OF		
		Moisture.	Insoluble matter.		Sodium Chloride.	Magnesium Chloride.	Calcium Chloride.	Magnesium Sulphate.	Calcium Sulphate.	Unaccounted for.	Regularity.	Size.	Transparency.
			In-organic.	Organic.									
	Cochin depot, Bombay best...	...	...	...	...	...	...	...	...	...	Irregular.	4 to very small.	Opaque.
	Do., Bombay aver.	...	...	...	...	...	...	...	...	...	Regular.	5 to small.	Opaque.
	Do., Tuticorin	...	...	...	...	...	...	...	...	...	Regular.	25 to very small.	Opaque.
	Chowghat, Bombay bt.	...	...	...	...	...	...	...	...	...	Regular.	5 to 1	Opaque.
	Do., do. avr.	8.342	1.453	.223	84.159	2.965	.185	...	2.942	+269	Regular.	35 to very small.	Opaque.
	Do., do. worst.	...	...	...	...	...	...	...	...	...	Irregular.	3 to very small.	Opaque.
	Ponani, Bombay best.	...	...	...	...	...	...	...	...	...	Irregular lumps.	3 to very small.	Opaque.
	Do., do. average.	7.217	1.061	.322	85.270	3.200	...	.146	2.817	+033	Regular.	5 to very small.	Opaque.
	Do., [do. worst.	...	...	...	...	...	...	...	...	...	Irregular.	5 to very small.	Opaque.
	Beypore, Bombay bt.	...	...	...	...	...	...	...	...	...	Regular.	4 to very small.	Opaque.
	Do., do. average.	...	...	...	...	...	...	...	...	...	Irregular.	4 to very small.	Opaque.
	Do., do. worst.	...	...	...	...	...	...	...	...	...	Irregular.	3 to very small.	Opaque.
	Do., Tuticorin avr.	3.036	1.083	.091	94.187	.472	...	1.180	.138	+139	Irregular.	2 to very small.	Opaque.
	Calicut, Bombay best.	...	...	...	...	...	...	...	...	...	Regular.	4 to very small.	Opaque.
	Do., do. average.	6.450	1.163	.220	88.365	2.151	.233	...	1.873	+457	Irregular.	45 to very small.	Opaque.
	Do., do. worst.	...	...	...	...	...	...	...	...	...	Irregular lumps.	4 to very small.	Opaque.
	Do., Tuticorin best.	...	...	...	...	...	...	...	...	...	Irregular.	3 to very small.	Opaque.
	Do., do. avr.	...	...	...	...	...	...	...	...	...	Irregular.	1 to very small.	Opaque.
	Tellicherry, Bombay best.	...	...	...	...	...	...	...	...	...	Irregular lumps.	5 to 15	Opaque.
	Do., do. avr.	...	...	...	...	...	...	...	...	...	Regular.	5 to small.	Opaque.
	Do., do. worst.	...	...	...	...	...	...	...	...	...	Regular.	3 to very small.	Opaque.
	Cannanore, Bombay best.	...	...	...	...	...	...	...	...	...	Regular.	4 to very small.	Opaque.
	Do., do. avr.	...	...	...	...	...	...	...	...	...	Irregular.	3 to very small.	Opaque.
	Do., do. worst.	...	...	...	...	...	...	...	...	...	Irregular.	4 to very small.	Opaque.
	Average of 3 specimens of Bombay salt.	7.386	1.226	.255	85.931	2.772	.139	.048	2.544	+251			

in the Madras Presidency--continued.

THE SALT CRYSTALS.						
Colour.	Solidity of form.	Cohesion.	Dryness.	Weight per c. f. in oz.	Impurities visible.	REMARKS.
Very dirty white.	Slightly hollow.	Good.	Dry.	732	Earth stains.	Four of the twenty-four specimens received are from Tuticorin, the others from Bombay. Those from Tuticorin are like the salts described from the Tinnevely district. Those from Bombay vary in colour from dirty white to black. The best looking of the Bombay salt is from Tellicherry, the worst from Calicut.
Almost black	Slightly hollow.	Easily broken.	Very moist.	894	Earth stains.	
White.	Slightly hollow.	Easily broken.	Slightly moist.	840	Earth stains.	
Very dirty white.	Slightly hollow.	Easily broken.	Slightly moist.	768	Earth stains.	
Very dirty white.	Slightly hollow.	Easily broken.	Moist.	856	Earth stains.	
Very dark grey.	Slightly hollow.	First rate.	Quite dry.	812	Earth stains.	
White.	Solid.	Fair.	Slightly moist.	780	Sand on crystals.	
Dirty white.	Slightly hollow.	Fair.	Slightly moist.	880	Earth stains.	
Dirty brown.	Solid.	Easily broken.	Very moist.	852	Earth stains.	
Very dirty white.	Slightly hollow.	Good.	Dry.	824	Earth stains.	
Very dirty white.	Rather hollow.	Very good.	Dry.	796	Earth stains.	
Almost black	Slightly hollow.	Good.	Nearly dry.	872	Earth stains.	
White.	Slightly hollow.	Good.	Nearly dry.	876	None.	
Very dirty white.	Solid.	Very good.	Moist.	876	Earth stains.	
Very dirty white.	Slightly hollow.	Very good.	Slightly moist.	872	Earth stains.	
Black.	Solid.	Good.	Very moist.	876	Earth stains.	
White.	Slightly hollow.	Fair.	Moist.	856	Earth stains.	
White.	Solid.	Easily broken.	Very moist.	812	Earth stains.	
Dirty white.	Slightly hollow.	Good.	Dry.	756	Earth stains.	
Almost black	Solid.	Fair.	Moist.	856	Earth stains.	
Almost black	Solid.	Good.	Very moist.	876	Earth stains.	
Very dirty white.	Slightly hollow.	Very good.	Slightly moist.	868	Earth stains.	
Very dirty white.	Slightly hollow.	Very good.	Dry.	808	Earth stains.	
Almost black	Slightly hollow.	Good.	Moist.	888	Earth stains.	

Analyses of specimens of salt from district markets.

District.	Locality.	Moisture.		Insoluble matter.		Total Chloride of Sodium reckoned in terms of Sodium Chloride.	Nature of insoluble residue.	REMARKS.
		When received for analysis.	When exposed to air for two days.	Inorganic.	Organic.			
Ganjam.	Aaka	8.129	8.715	1.740	2.54	87.162	Chiefly silica, alumina and iron.	Of the fourteen bazar specimens received, thirteen are fair representative specimens of the salt of the Ganjam works. No salts from other districts have been sent with the exception of Kuppit salt from Vizagapatam, (which is sold in the Chicacole bazar). The salts are slightly moist and clean-looking. In colour they vary from pale dirty white to pale brown. The best looking salt was obtained at Aaka, from the Noupada pans. The smallest and dirtiest salt is from Purushottampur from the Ganjam pans. There is no appearance of admixture in any of the specimens.
	Parlakimidi	9.373	9.927	1.462	1.78	88.042	Chiefly silica, alumina and iron.	
	Udayagiri	11.751	11.319	.930	.220	86.580	Chiefly alumina and iron.	
Vizagapatam.	Vizagapatam	6.442	6.146	1.684	.216	84.825	Chiefly alumina, silica, iron and gypsum.	In the twenty specimens sent, the colour varies from white to very dirty white, and from pale red to brown. The crystals average from 2 to very small. These specimens are very moist, six moist and eleven slightly moist. Only eleven specimens show the works whence procured. Four of these are from the Ganjam district and seven from Vizagapatam. The Ganjam specimens are whiter in colour and less moist than the Vizagapatam salts. No trace of admixture is apparent in any of the salts.
	Chodavaram	8.892	7.937	1.449	.071	93.015	Chiefly silica, alumina and iron.	
	Mulkaugiri	6.606	6.876	2.003	.247	87.165	Silica and alumina about equal, and iron.	
Godavary.	Bhadraclalam	9.876	10.744	2.333	1.120	87.165	Chiefly silica, some alumina and iron.	The twenty specimens received are all fair representatives of the Godavary pan salts, i.e., dark in colour and small grained. Fifteen of the specimens are marked as coming from the Godavary works, one from Krishna, and four do not show the source where obtained, but from their appearance they seem to be Godavary salt. Twelve of the specimens are slightly moist, six moist and two dry. The whitest salt is from the Manghapudi pans in the Krishna district, the dirtiest from the Mogallam pans of the Godavary district. There is no appearance of admixture in these salts.
	Bradhachalam	7.815	8.612	2.660	.240	89.605	Alumina, silica and iron.	
	Pitlapur	8.269	9.617	1.360	.140	99.675	Chiefly alumina, silica and iron.	
Kistna.	Masulipatam	11.351	10.253	3.030	.220	88.820	Chiefly alumina, silica and iron.	With regard to the eighteen specimens received, no detail as to the source of manufacture has been furnished, but they all resemble the platform specimens from the Kistna district. As a rule they are dark in colour and small in grain. There is no appearance of admixture in any of the salts. Fourteen of the specimens were slightly moist, two moist, one very moist and one dry. The best specimen as regards size and colour was obtained in the Guntur bazar, the worst in the Masulipatam bazar.
	Nandigama	7.856	6.856	2.550	.200	83.655	Silica, alumina and iron.	
	Guntur	10.305	10.221	2.378	.172	87.165	Chiefly alumina, silica and iron.	
Nellore.	Pedili	7.274	7.263	2.434	.245	88.335	Almost entirely alumina, silica and iron.	Of the nineteen specimens received, eighteen are from the Nellore pans. The salts are fair specimens of these sent from the platforms. No admixture is apparent. The crystals are of fair size and the colour varies from white to dirty white and pale brown. Eleven of them are slightly moist and eight moist. The best specimen is from the Tada pans, the worst from the Pedali pans.
	Nellore	13.375	13.779	.744	.076	89.505	Almost entirely alumina, silica, iron and gypsum.	
	Kazigiri	10.620	11.455	2.936	.230	84.825	Alumina and silica about equal, and iron.	

APPENDIX A.]

District.	Locality.	Moisture.		Insoluble matter.		Total Chloride of Sodium reckoned in terms of Sodium Chloride.	Nature of insoluble residue.	REMARKS.
		When received for analysis.	When exposed to air for two days.	Inorganic.	Organic.			
Cuddapah.	Kadri	6.021	9.028	1.316	.221	92.157	Chiefly silica, alumina and iron.	Of the nineteen specimens received from Cuddapah, fifteen are sea-salts and four earth-salts. The sea-salts are good in colour and fair in size of crystals, but the source whence procured has not been given. The earth-salts are dirty white and pale brown. Sixteen of the salts are slightly moist and three moist. No specimen shows signs of admixture. The best looking salt is a sea-salt from the Kadri bazar, the worst an earth-salt from Tollarapuram.
	Madanapalli	8.719	10.715	1.901	.161	89.485	Chiefly silica, alumina and iron.	
	Badvel (earth-salt)	7.856	8.833	1.360	.300	87.165	Chiefly alumina, iron and nitrates.	
Bellary.	Tollamarpuram (do.)	7.351	7.348	3.155	.215	79.390	Alumina, silica and iron.	
	Gangapuram (do.)	5.442	5.171	1.155	.125	52.065	Alumina, silica, iron; contains sulphates largely.	
	Pallampett (do.)	13.049	12.920	2.585	.595	79.390		
Kurnool.	Harpanhalli	5.278	5.608	2.602	.284	88.325	Nearly all alumina, silica and iron.	From the Bellary district fifteen specimens of sea-salts have been received. These vary in colour from white to dirty white and pale brown, as a rule the crystals are small. Three specimens are dry, eleven slightly moist, and one moist. No admixture is apparent. The best looking salt is from Kallian-droog the worst from Harpanhalli. The source of production has not been stated.
	Kalyandroog	5.500	5.150	.925	.071	89.982	Chiefly silica, alumina and iron.	
	Anantapur	6.728	8.639	3.020	.250	88.920	Silica, alumina and iron.	
Chingolepur.	Harpanhalli (earth-salt)	8.910	7.275	3.135	.515	89.485	Nearly all alumina, silica and iron.	
	Alur (earth-salt)	6.927	7.002	.425	.065	86.580	Chiefly alumina, silica and iron.	
	Anantapur (earth-salt)	9.639	8.076	.235	.115	88.335	Chiefly alumina, silica and iron.	
North Arcot.	Gambana (earth-salt)	9.609	9.394	2.784	.236	81.315	Almost entirely alumina, silica, iron and gypsum.	Seventeen specimens of earth-salts, but no sea-salts have been received from Kurnool. These vary in colour from pure to dirty white and pale brown. All appear to have been produced by artificial evaporation, as the crystals are very small. No trace of admixture is apparent. Three are dry, seven slightly moist, and seven moist. The best looking salt is from Puthkonda, the worst from Nandial.
	Ramalakota (do.)	.960	1.563	.924	.166	93.015	Alumina, silica, a mere trace of iron.	
	Koilkunda (do.)	9.258	9.997	1.634	.306	86.580	Alumina, silica, lime and iron.	
Chingolepur.	Conjevaran (earth-salt)	9.207	9.788	1.603	.249	69.020	Contains sulphates largely, alumina, silica, lime, grains of charcoal and iron.	The salts from the bazars in Chingolepur much resemble those from the platforms, but no detail regarding the source of production has been given. Of the thirteen specimens all are sea-salt except one, an earth-salt from Conjevaran, and this is white and small-grained. No admixture is apparent in the salts. Two are dry, eight slightly moist and three moist. The best looking salt is from the Madurantakam bazar, it has large, white crystals, the worst is from the Wandewash bazar, it is very dark coloured and fine grained.
	Chingolepur	7.200	5.777	2.240	.010	87.427		
	Saidapett	9.459	9.011	2.800	.530	93.015		
South Arcot.	Vellore	7.476	7.959	2.650	.350	89.505	Alumina, silica, iron.	Twenty-two specimens have been received from North Arcot, of which twenty-one are sea-salts and one an earth-salt. This earth-salt is stated not to be a bazar specimen but made in presence of the Deputy Collector. Three of the sea-salts are from Nellore and one from Madras. The source of production is not shown regarding the other salts. The salts vary in colour from white to dirty white and brown, the crystals being on the average small. No trace of admixture is apparent. Two are dry, seventeen slightly moist, and three moist. The best looking salt is from Kalahastri, the worst from the Chittour bazar. The earth-salt is very clean looking.
	Wallajah (earth-salt)	4.797	3.463	2.319	.356	88.042	Chiefly alumina, silica and iron.	
	Pedar	5.352	6.595	2.420	.410	90.090	A little alumina, silica and iron.	
South Arcot.	Tirupuliyur	11.926	11.316	2.656	.144	83.655	Nearly all alumina, silica and iron.	The salts from South Arcot vary in colour from white to dirty white and about half the specimens have the crystals of very small size. Twenty-seven specimens have been received, and of these only four show the source whence obtained. All are sea-salts with no signs of admixture. Twenty are moist, and seven very moist. The best looking salt is from the Merkaram pans, sold at Tirunavalur, the worst is from the Chikilambaram bazar.
	Chunampett	9.779	8.184	4.316	.214	84.825	Alumina, silica and iron.	
	Chikilambaram	11.943	12.422	2.784	.376	83.655	Chiefly alumina, silica and iron.	
	Cuddalore	8.705	8.123	2.779	.565	81.240	Alumina and silica about equal, iron.	

Analyses of specimens of salt from district markets—(continued.)

District.	Locality.	Moisture.		Insoluble matter.		Total chlorine reckoned in terms of Sodium Chloride.	Nature of insoluble residue.	Remarks.
		When recently exposed to air for two days.	When exposed to air for two days.	Inorganic.	Organic.			
Tanjore.	Negapatam.....	9.103	8.068	8.938	.262	81.215	Chiefly alumina, silica and iron.	Twenty-one specimens have been received, all are sea-salts, but the source of production has not been recorded. Generally the specimens are much darker in colour than those received from the works, the crystals are also much smaller. This may be accounted for in two ways, 1st, that the crystals have been broken by attrition in carriage or 2nd, that specimens above the average size were sent from the pans. No admixture is apparent. Two specimens were dry, seven slightly moist, ten moist and two very moist. The best looking as regards colour and size is from the Aduturai bazaar, the worst from Negapatam.
	Aranthangi.....	7.831	6.975	5.820	.259	87.165	Almost entirely silica, alumina and iron.	
	Adrampatam.....	11.097	10.748	1.490	.116	83.333	Alumina, silica and iron.	
	Mayavaram.....	9.853	8.233	6.280	.050	89.070		
Trichinopoly.	Vellangudi.....	6.107	6.907	8.373	.268	83.665	Alumina, silica and iron.	With one or two exceptions all the nineteen specimens are very dark in colour and have the crystals very small. Three are from the Tanjore pans, the others do not show the source of production. Two are dry and seventeen are slightly moist. There is no appearance of admixture. The best looking salt is from the Kallamavadi bazaar, the worst looking from Kallitalai.
	Musiri.....	9.531	8.404	3.960	.190	89.995	Alumina, very little silica and iron.	
	Musiri.....	7.899	6.383	5.280	.380	89.797		
	Ramnad.....	8.954	3.546	.235	.063	94.183	Alumina, silica and iron.	The specimens for Madurai form the whitest set of bazaar specimens which have been received. With the exception of one specimen procured in Dindigul from the Tuticorin works, all are sea-salts made in the district. They are pure in colour with crystals of fair size, and although only four of the twenty specimens received show the source of production, they fairly represent the salts from the works of this district. Nine are dry, six slightly moist, four moist and one very moist. No admixture is apparent. The best salt with regard to colour and size of crystal is spontaneous salt from the Ramnad bazaar, the worst is a dirty-looking small-grained salt from Dindigul.
Madurai.	Dindigul.....	5.489	3.401	5.633	.212	87.165	Nearly all alumina, silica & iron.	
	Palani.....	6.025	7.783	1.475	.125	92.430	Silica and alumina about equal and iron.	
	Nagargudi.....	7.783	7.819	1.780	.060	89.703	Alumina and silica about equal and iron.	The source of production has not been given for any of the eighteen specimens received, but in colour and size of crystal they fairly represent the salt from the works in Tinnevely. All are sea-salts and no trace of admixture is apparent. The specimens are clean looking. One is dry, seven slightly moist, seven moist and three very moist. The best looking specimen is from the Watrap bazaar, the worst from Viridapatti.
	Ambasamudram.....	13.154	12.579	.520	.350	86.287	Silica, a little alumina, iron.	
Tinnevely.	Tenikasi.....	10.014	11.391	.720	.280	85.935	Alumina, silica, iron.	
	Talavadi (Bombay salt).....	4.942	2.865	2.484	.909	91.845	Nearly all alumina, silica & iron.	Of the nineteen specimens sent, fifteen are sea-salts from the Madras pans, three are from Bombay, and one is earth-salt. No detail as to source of production has been given. The salts vary from white to black with crystals of fair size. No signs of admixture is apparent. Four are dry, and fifteen moist. The best looking salt is from the Talavadi bazaar, the worst from Caroor.
	Irode.....	9.067	8.210	2.599	.132	85.995	Chiefly alumina, silica and iron.	
	Caroor.....	8.700	9.892	2.230	.070	87.165		
Coimbatore.	Dharanipuni.....	6.641	8.487	2.276	.146	88.335	Chiefly silica, alumina and iron.	The eighteen specimens received are sea-salts of the Madras Presidency, but, with the exception of two from Merkanam, no detail as to the source of manufacture has been furnished. All are pretty white and the crystals are of fair size. They appear to be free from admixture. Three of the salts are dry, nine slightly moist, and six moist. The best looking salt is from Merkanam sold in the Alstur bazaar, the worst is from the Ostar bazaar.
	Triptore.....	7.877	8.397	2.400	.250	88.042	Chiefly alumina, silica and iron.	
	Salem.....	9.313	10.319	2.787	.162	84.296	Chiefly silica, alumina and iron.	

South Canara.	Mangalore.....	13.677	13.714	1.880	.250	82.485	Nearly all alumina, silica and iron.	The specimens from South Canara, twelve in number, are all very black. No details are given as to the source of production, but from the character of the crystals four specimens seem to be Bombay salt, and eight salt from South Canara works, or perhaps from Goa, as the Goa salt is said to be very like the salt made in this district. The South Canara bazaar salts are blacker than the specimens sent from the pans. Nine are slightly moist, one moist, and three very moist, no admixture is apparent. The best looking salt is from Bombay and sold in the Mangalore bazaar, the worst South Canara salt is from Kasargode.
	Udupi.....	7.531	8.672	2.934	1.636	86.580	Nearly all alumina, silica and iron, a few crystals of gypsum.	
	Calicut (Bombay).....	5.754	4.737	1.154	.246	87.165	Alumina, silica and iron.	From Malabar thirty-eight specimens of bazaar salts have been received, all sea-salts. Twenty-seven of these are from Bombay and eleven from Tinnevely. All the Bombay specimens are very dark in colour, those from Tinnevely white. No admixture is apparent. Twenty of the salts were slightly moist, fifteen moist, and three very moist. The whitest and best looking is Tuticorin salt from the Palghat bazaar, the worst looking, Bombay salt from Vythery.
	Cannanore (Bombay).....	5.713	5.532	2.274	.376	90.675	Alumina, silica, iron and gypsum.	
Malabar.	Palghat (Bombay).....	7.370	6.232	1.504	.426	88.335	Chiefly alumina, silica, iron and gypsum.	
	Anjengo.....	21.528	21.366	.430	.120	77.805	Alumina, silica and iron.	
	Nilgiri.....	8.115	9.154	1.653	.219	85.410		
	Coonoor.....	8.573	8.231	2.194	.456	87.165		
Nilgiri.	Average of 67 Bazaar salts.....	8.397	8.443	2.346	.266	86.212		There are four specimens from the Nilgiris. Two are Madras salts, one Bombay salt and one looks like a mixture of Bombay and Madras salt. All are dirty white in colour. Two are dry, two moist.
	Average of 12 earth salts.....	7.727	7.574	1.792	.273	80.949		
	Average of 4 Bombay salts.....	5.945	4.766	1.854	.339	89.505		
	Average of 51 sea salts from the Bazaars in the Madras Presidency.....	8.723	8.936	2.517	.259	87.192		

Analyses of Earth-salts.

District.	Place of manufacture.	Moisture.	Insoluble matter.		Sodium Chloride.	Magnesium Chloride.	Calcium Chloride.	Magnesium Sulphate.	Calcium Sulphate.	Sodium Sulphate.	Unaccounted for.	Remarks.
Cuddapah.	Tiruvengadam...	10.335	1.750	Organic.	200.76.589	24.59	...	...	1.271	6.189	-.987	A series of earth-salts purchased direct from the earth-salt manufacturing classes have been received from Cuddapah. All the sixteen specimens received are small-grained, and in colour they vary from pure white to dirty white, pale red, and dark brown. Four are slightly moist, ten moist, and two very moist. The best-looking salt is from Chordapalli, the worst from Pallampet.
	Doddikuntá	5.550	.741	Inorganic.	128.95.390	2.515	...	...	3.053	1.390	-1.253	
	Chordapalli	3.802	.142		0.30.81.827	2.909	...	...	0.897	6.348	-4.034	
Bellary.	Bellary	7.516	.833		0.32.87.970	1.005	1.390	...	1.059	...	-.195	From Bellary thirty-one specimens were received from earth-salt works. These also show various shades of white, red, and brown. Some of the crystals are of fair size, owing probably to their having been produced by solar instead of artificial evaporation, but they generally have small crystals. Four are dry, sixteen moist, and nine very moist. The best looking is from Adoni, the worst from Harpanahalli.
	Hospett	8.072	1.114		1.33.71.065	2.725	...	...	1.565	16.018	+1.592	
	Adoni	8.203	7.407		0.53.87.879	1.319	...	7.92	1.101	...	-.066	
Kannool.	Markapur	3.076	1.601		0.05.82.025	2.272	...	...	1.700	8.505	-.723	From Kannool twenty-two specimens from earth-salt works were received. The colours are similar to those described above, but paler. The crystals also vary in size. Six were dry, six slightly moist, nine moist and one very moist. The best looking was produced at Markapur, the worst at Kanala.
	Chogalamari	5.569	.863		2.14.80.358	4.102	...	...	2.585	4.962	-1.347	
	Pada Hulti	2.984	1.501		0.79.92.201	1.240	4.85	...	2.439	...	+.967	
Average...		6.229	1.011		1.11.82.806	2.288	.202	.088	1.738	4.857	-.075	

APPENDIX B.

The following Statement, showing the Salt transactions and realizations for ten official years ending 1874-75, has been compiled from the monthly accounts current submitted to the Board of Revenue. In framing it, the wastage which actually accrued during each year in heaps disposed of by weightment has been entered; whereas in the accounts current wastage is retained until sanction of Government is received for writing it off the stock accounts. Further, in case of wholesale sales, in which discount assumed to cover wastage is allowed, the net quantity is exhibited in the Statement throughout, while in the accounts current it was the practice up to 1st April 1873, to enter the gross quantities under sales. The quantities of salt imported into the West Coast districts on private account, and the duty levied on them, are also shown.

OFFICIAL YEARS.	Districts.	Opening Balance.	Manufactured.	Spontaneous Salt.	Received from other Districts.	Gain by weightment.	Miscellaneous.	Total received.	HOME CONSUMPTION.	
									Retail.	Wholesale.
1	2	3	4	5	6	7	8	9	10	11
1865-6	GANJAM.	1. Mds. 4,41,848	1. Mds. 8,91,350	1. Mds. 19,496	1. Mds. ...	1. Mds. 194	1. Mds. 108	1. Mds. 13,32,976	1. Mds. 1,67,831	1. Mds. 4,560
1866-7		4,30,148	11,66,660	1,401	...	32	338	15,98,579	1,02,435	...
1867-8		7,09,826	5,99,182	...	...	82	...	13,08,597	1,34,571	...
1868-9		4,87,360	9,35,400	201	...	...	13	14,22,974	1,08,691	1,140
1869-70		5,51,364	12,77,958	284	...	...	41	18,29,597	1,06,394	2,280
1870-1		10,92,031	6,63,345	1,735	...	...	27	17,57,138	1,29,523	...
1871-2		9,40,785	7,68,781	61	...	208	67	17,09,902	1,39,825	2,250
1872-3		8,36,876	6,13,282	...	...	...	31	14,49,689	1,39,329	1,140
1873-4		7,18,062	9,73,817	...	...	...	3	15,91,882	1,63,167	...
1874-5		8,15,966	6,49,527	2	...	104	4	14,65,603	1,54,845	...
First 5 yrs. av. ...		5,24,009	9,74,166	4,266	...	62	162	15,02,545	1,23,988	1,596
Last 5 yrs. average		8,80,644	7,33,751	350	...	62	26	16,14,843	1,45,338	684
Ten yrs. average.		7,02,326	8,53,928	2,313	...	62	64	15,58,693	1,34,663	1,140
1865-6	VIZAGAPATAM.	2,68,519	48,970	518	...	1,981	14	3,20,002	2,10,851	...
1866-7		86,650	1,39,738	...	...	617	91	2,27,026	1,38,243	...
1867-8		32,400	1,68,284	...	...	1,155	58	2,01,897	1,59,281	...
1868-9		41,044	3,39,076	...	...	356	148	3,81,274	1,29,482	52,440
1869-70		1,92,121	2,95,421	...	...	4	589	4,88,134	1,65,216	5,700
1870-1		3,11,822	1,09,527	526	...	4	174	4,22,058	1,75,624	...
1871-2		2,33,823	85,722	121	...	11	123	3,22,805	1,46,554	...
1872-3		1,55,595	2,56,809	...	...	3	646	4,13,953	1,89,116	...
1873-4		1,99,891	2,33,177	23	...	18	35	4,33,142	2,23,770	3,420
1874-5		1,80,872	2,53,956	630	...	11	28	4,35,517	2,74,364	...
First 5 yrs. av. ...		1,24,263	1,98,298	105	...	822	179	3,23,667	1,70,005	11,628
Last 5 yrs. average		2,16,402	1,88,438	264	...	9	202	4,05,315	2,01,426	684
Ten yrs. average.		1,76,332	1,93,368	185	...	416	196	3,64,491	1,86,265	6,156
1865-6	GODAVERY.	2,95,190	1,46,509	...	...	798	...	4,42,497	2,37,809	...
1866-7		1,02,707	4,83,912	...	...	1,330	49	5,87,398	2,34,709	3,420
1867-8		2,97,177	2,42,548	...	...	843	14	5,40,582	3,28,013	1,140
1868-9		2,72,010	1,84,783	...	...	69	4	4,56,566	2,72,496	...
1869-70		1,50,546	3,81,388	...	...	14	114	5,32,062	2,40,615	14,820
1870-1		2,33,568	2,99,272	...	...	414	2	5,33,256	2,80,831	26,220
1871-2		2,49,124	2,02,463	...	...	59	33	4,51,684	2,74,680	...
1872-3		1,49,700	4,09,529	...	...	28	18	5,58,269	2,76,300	...
1873-4		2,55,907	3,06,735	...	...	11	12	5,62,365	2,47,639	18,240
1874-5		2,71,255	2,40,365	...	...	...	13	5,11,633	3,00,645	...
First 5 yrs. av. ...		2,23,526	2,87,708	...	...	611	36	5,11,861	2,42,628	3,876
Last 5 yrs. average		2,31,831	2,91,474	...	...	102	16	5,23,442	2,60,039	8,692
Ten yrs. average.		2,27,638	2,99,591	...	...	356	25	5,17,660	2,54,334	6,384
1865-6	KISTNA.	7,48,003	6,16,741	...	...	795	...	13,65,539	2,11,520	20,520
1866-7		8,40,486	4,11,989	...	...	781	60	12,62,316	1,57,658	1,21,980
1867-8		5,80,752	4,25,615	...	...	216	...	10,06,583	2,02,602	70,986
1868-9		4,47,863	8,53,421	...	...	6	...	13,30,793	2,61,051	42,150
1869-70		6,64,230	7,18,574	...	...	4	...	13,82,808	3,04,943	30,780
1870-1		7,73,564	2,44,730	...	...	29	...	10,18,323	2,66,626	1,31,100
1871-2		2,74,953	9,62,578	...	54,492	50	...	12,92,073	2,13,504	1,99,500
1872-3		6,30,412	9,27,107	...	...	...	...	15,57,519	1,93,292	2,16,600
1873-4		9,02,394	4,69,928	...	...	...	...	13,72,322	1,61,285	2,61,060
1874-5		7,07,706	4,76,309	...	...	11	3	11,84,629	1,56,841	3,27,357
First 5 yrs. av. ...		6,57,967	6,11,568	...	...	360	12	12,69,607	2,27,936	57,289
Last 5 yrs. average		6,57,866	6,16,130	...	10,398	13	1	12,84,853	1,93,110	2,27,124
Ten yrs. average.		6,57,866	6,13,699	...	5,440	190	6	12,77,230	2,13,053	1,12,266

SALES.									
SUMPTION.		INLAND CONSUMPTION.				TOTAL SALES.			
sale.	Total Home Consumption.	Retail.	Wholesale.		Total Inland Consumption.	Retail.	Wholesale.		Total.
Special.			Ordinary.	Special.			Ordinary.	Special.	
12	13	14	15	16	17	18	19	20	21
I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
...	1,72,551	2,38,677	4,70,820	...	7,07,497	4,04,508	4,75,380	...	8,79,888
...	1,02,455	2,46,759	4,95,900	...	7,42,659	3,49,214	4,95,900	...	8,45,114
...	1,91,571	2,31,944	4,13,820	...	6,45,764	3,66,515	4,13,820	...	7,80,335
...	1,09,831	2,47,294	4,74,240	...	7,21,534	3,55,985	4,75,380	...	8,31,365
...	1,08,674	2,69,085	3,28,320	...	5,97,405	3,75,479	3,30,600	...	7,06,079
...	1,29,523	4,13,978	2,31,420	...	6,45,338	5,43,501	2,31,420	...	7,74,921
...	1,42,105	4,21,949	2,67,960	...	6,89,849	5,61,774	2,70,186	...	8,31,954
...	1,40,469	3,84,312	1,72,140	...	5,58,452	5,23,641	1,73,280	...	6,96,921
...	1,63,167	4,97,182	1,67,580	...	6,64,762	6,60,349	1,67,580	...	8,27,929
...	1,34,845	2,56,619	35,340	...	5,91,959	7,11,464	35,340	...	7,46,804
...	1,25,584	2,46,352	4,36,620	...	6,82,972	3,70,340	4,36,216	...	8,08,556
...	1,46,022	4,54,303	1,74,876	...	6,29,684	6,00,146	1,75,550	...	7,75,706
...	1,35,803	3,50,580	3,05,748	...	6,56,328	4,85,243	3,06,883	...	7,92,131
...	2,10,851	1,931	...	...	1,931	2,12,782	...	...	2,12,782
...	1,88,243	1,724	...	...	1,724	1,89,967	...	...	1,89,967
...	1,59,281	...	...	...	...	1,59,381	...	...	1,59,381
...	1,81,572	351	2,280	...	2,631	1,24,783	54,720	...	1,84,503
...	1,70,916	4	...	...	4	1,65,220	5,700	...	1,70,920
...	1,75,824	2,098	...	...	2,098	1,77,922	...	...	1,77,922
...	1,46,554	2,295	...	...	2,295	1,48,849	...	...	1,48,849
...	1,89,116	6,392	...	...	6,392	1,95,408	...	...	1,95,408
...	2,27,190	6,172	...	...	6,172	2,28,942	3,420	...	2,33,362
...	2,74,364	5,331	...	...	5,331	2,79,695	...	...	2,79,695
...	1,82,233	802	456	...	1,238	1,71,407	12,084	...	1,83,491
...	2,02,610	4,437	...	...	4,437	2,06,363	684	...	2,07,047
...	1,92,421	2,620	228	...	2,848	1,88,285	6,384	...	1,95,269
...	2,37,809	17,779	...	...	17,779	2,55,088	...	...	2,55,088
...	2,38,129	873	...	...	873	2,35,582	3,420	...	2,39,002
...	2,29,153	19,904	...	...	19,904	2,47,917	1,140	...	2,49,057
...	2,72,496	8,760	...	...	8,760	2,81,256	...	...	2,81,256
...	2,55,435	17,177	...	...	17,177	2,57,722	14,820	...	2,72,612
...	2,37,031	9,345	...	...	9,345	2,40,176	26,220	...	2,66,396
...	2,74,689	13,082	...	...	13,082	2,87,771	...	...	2,87,771
...	2,76,390	12,886	...	...	12,886	2,89,276	...	...	2,89,276
...	2,65,870	6,643	...	...	6,643	2,54,282	18,240	...	2,72,522
...	3,00,645	6,879	...	...	6,879	3,07,524	...	...	3,07,524
...	2,46,564	12,899	...	...	12,899	2,55,527	5,876	...	2,59,403
...	2,74,931	9,767	...	...	9,767	2,75,806	8,692	...	2,84,698
...	2,50,718	11,333	...	...	11,333	2,65,667	6,384	...	2,72,051
2,112	2,34,152	33,359	2,02,920	13,728	2,50,007	2,44,879	2,23,440	15,940	4,84,159
...	2,79,838	20,243	3,41,482	...	3,64,725	1,78,101	4,66,462	...	6,44,563
...	2,73,583	4,720	2,07,796	...	2,55,456	2,50,322	2,78,722	...	5,29,044
...	3,05,231	2,27,260	85,760	...	3,23,020	4,90,311	1,37,940	...	6,28,251
...	3,35,729	1,08,425	70,104	...	2,33,529	4,68,974	1,60,884	...	5,69,238
...	3,91,726	1,08,496	2,09,760	...	3,13,256	3,64,122	3,40,860	...	7,04,932
...	4,18,094	57,151	1,53,900	...	2,11,651	2,76,255	8,53,400	...	8,29,653
19,330	4,29,222	34,269	1,59,600	...	1,08,869	2,27,661	3,76,260	19,330	6,23,691
...	4,22,345	56,913	1,49,340	...	2,06,253	2,18,198	4,10,400	...	6,28,593
...	4,34,201	1,01,113	70,656	...	1,71,769	2,57,957	3,98,013	...	6,55,976
422	2,55,707	98,401	1,84,200	2,746	2,55,347	3,26,337	2,41,489	3,163	5,71,054
3,866	4,29,100	70,703	1,48,651	...	2,19,359	2,68,818	3,75,775	3,663	6,48,459
2,444	3,57,403	84,555	1,66,426	1,373	2,52,354	2,97,698	3,08,682	3,517	6,09,757

OFFICIAL YEARS.	Districts.	WASTAGE.				Exported beyond the Presidency.	Sold to French Government.	Sent to other Districts.	Miscellaneous.
		Retail.	Ordinary Discount.	Special Discount.	Total.				
		22	23	24	25	26	27	28	29
1865-6	CANARA.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
1866-7		17,860	25,020	...	42,880	...	...	...	60
1867-8		17,860	26,100	...	43,960	...	...	...	179
1868-9		19,036	21,780	...	40,816	...	...	...	86
1869-70		15,212	23,020	...	40,232	...	...	...	13
1870-1		14,047	17,400	...	31,447	...	...	...	40
1871-2		23,247	12,180	...	41,427	...	...	...	5
1872-3		27,284	14,220	...	41,504	...	...	...	68
1873-4		25,547	9,120	...	34,667	...	...	...	33
1874-5		39,161	8,320	...	47,981	...	...	...	3
First 5 yrs. average.		16,509	23,064	...	39,867	...	...	...	76
Last 5 yrs. average.		32,096	9,240	...	41,336	...	...	...	24
Ten yrs. average.		24,450	16,152	...	40,602	...	...	...	50
1865-6	VIZAGAPATAH.	20,640	...	...	20,640	...	...	...	...
1866-7		4,659	...	...	4,659	...	...	...	...
1867-8		922	...	...	922	...	...	...	...
1868-9		1,770	2,360	...	4,130	...	...	...	...
1869-70		5,092	300	...	5,392	...	...	...	...
1870-1		10,308	...	...	10,308	...	...	...	...
1871-2		18,361	...	...	18,361	...	...	...	...
1872-3		17,754	...	...	17,754	...	...	...	...
1873-4		18,728	180	...	18,908	...	...	...	...
1874-5		13,625	...	...	13,625	...	...	...	...
First 5 yrs. average.		6,616	636	...	7,252	...	...	...	...
Last 5 yrs. average.		15,735	36	...	15,771	...	...	...	...
Ten yrs. average.		11,186	336	...	11,522	...	...	...	...
1865-6	GODAVERY.	33,622	...	...	33,622	50,000	1,080	...	...
1866-7		13,512	180	...	13,692	37,400	1,080	...	47
1867-8		17,223	60	...	17,283	1,500	720	...	12
1868-9		24,342	...	...	24,342	720	720	...	2
1869-70		18,870	780	...	19,650	5,400	720	...	112
1870-1		15,276	1,380	...	16,656	...	1,080	...	...
1871-2		13,462	...	...	13,462	...	720	...	31
1872-3		12,656	...	...	12,656	...	720	...	10
1873-4		14,730	980	...	15,690	2,160	720	...	9
1874-5		23,158	...	...	23,158	46,645	720	...	...
First 5 yrs. average.		21,314	204	...	21,518	18,860	864	...	35
Last 5 yrs. average.		15,858	468	...	16,326	9,761	792	...	10
Ten yrs. average.		18,586	336	...	18,922	14,310	828	...	22
1865-6	KISTNA.	17,974	11,760	2,160	31,894	...	...	...	...
1866-7		12,450	24,551	...	37,001	...	...	...	...
1867-8		15,507	14,669	...	30,176	...	...	...	...
1868-9		31,052	7,260	...	38,312	...	...	...	...
1869-70		34,676	5,310	...	39,986	...	...	...	...
1870-1		20,448	17,940	...	38,388	...	...	...	...
1871-2		13,406	18,600	...	32,006	...	...	...	...
1872-3		10,672	19,800	1,562	32,034	...	...	...	...
1873-4		14,418	21,600	...	36,018	...	...	...	...
1874-5		25,617	20,948	...	46,565	...	...	67,470	...
First 5 yrs. average.		22,332	12,710	432	35,474	...	...	...	...
Last 5 yrs. average.		16,912	19,778	312	37,002	...	...	13,494	...
Ten yrs. average.		19,622	16,244	372	36,238	...	...	6,747	...

Grand Total Expended.	Closing Balance.	REALIZATIONS.					
		Retail.	Wholesale.	Exported beyond the Presidency.	Sold to French Government.	Miscella- neous.	Total.
30	31	32	33	34	35	36	37
I. Mds.	I. Mds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
9,22,828	4,39,148	6,12,176	7,22,475	...	...	607	13,35,258
8,89,253	7,09,326	5,59,299	8,36,831	...	...	453	14,25,615
8,21,237	4,87,660	6,18,494	6,98,321	...	...	376	13,17,191
8,71,510	5,31,364	6,00,722	8,02,204	...	...	30	14,02,859
7,37,566	10,92,031	7,01,312	6,42,675	...	...	63	13,44,080
8,16,353	9,40,785	10,87,002	4,62,640	...	...	20	15,49,862
8,73,526	8,36,376	11,23,649	5,40,860	...	...	282	16,64,191
7,31,637	7,18,062	10,47,283	3,46,660	...	...	179	13,94,022
8,75,916	8,15,366	13,20,698	3,35,160	...	...	76	16,55,974
7,87,907	6,77,696	14,73,997	73,672	...	...	851	15,98,750
8,48,498	6,54,046	6,24,401	7,40,502	...	...	218	13,65,221
8,17,066	7,97,177	12,10,506	3,51,718	...	...	282	15,62,506
8,32,783	7,25,911	9,17,453	5,40,110	...	...	500	14,63,963
8,53,422	86,560	3,22,703	...	...	...	37	3,22,740
1,94,626	7,400	3,20,569	...	...	...	37	2,20,806
1,60,203	41,691	48,785	...	...	...	47	2,08,632
1,39,153	1,92,121	...	92,340	...	...	14	3,11,363
1,76,312	3,11,822	3,11,974	6,819	...	...	7	3,15,600
1,88,230	2,33,628	3,55,844	...	...	...	1,060	3,56,934
1,67,310	1,55,595	2,37,693	...	...	...	1,293	2,38,991
2,13,162	1,09,391	3,90,815	...	...	...	58	3,90,873
2,52,270	1,50,372	4,59,886	6,840	...	...	318	4,67,044
2,23,320	1,42,197	5,59,391	...	...	...	55	5,59,446
1,90,743	1,32,624	2,87,408	20,392	...	...	28	3,07,828
2,21,338	1,32,477	4,12,727	1,368	...	...	563	4,14,658
2,06,791	1,57,700	3,50,067	10,850	...	...	296	3,61,243
3,38,700	1,02,797	5,84,082	...	7,500	83	55	3,31,729
2,30,321	2,97,177	3,37,546	5,771	5,610	103	443	4,09,473
2,68,572	2,72,010	4,13,360	1,024	213	69	763	4,21,329
3,06,330	1,50,546	4,74,620	...	...	67	11	4,74,693
2,98,494	2,33,568	4,77,461	29,640	765	66	168	5,08,100
2,84,132	2,49,124	4,80,351	52,440	...	99	1	5,32,891
3,01,984	1,49,700	5,75,542	...	...	66	48	5,75,656
2,92,662	2,53,607	5,78,551	...	...	66	16	5,78,623
2,91,110	2,71,255	5,08,565	36,450	306	66	12	5,45,429
3,78,047	1,23,586	6,15,043	...	6,608	66	5	6,21,727
3,00,680	2,11,201	4,30,414	7,467	2,818	77	288	4,41,064
3,11,537	2,11,855	5,51,611	17,784	1,333	73	16	5,70,867
3,06,133	2,11,527	4,91,013	12,626	2,100	75	152	5,05,966
5,16,053	8,40,486	3,71,813	3,59,530	...	...	242	7,31,595
6,31,564	5,80,752	3,00,546	7,87,155	...	...	183	16,87,864
5,59,220	4,47,363	4,22,418	4,70,542	...	...	664	8,93,424
6,56,663	6,64,330	8,27,400	2,32,774	...	...	66	10,60,240
6,03,244	7,73,564	8,79,912	1,99,631	...	...	124	10,79,667
7,43,370	2,74,953	7,28,244	6,81,720	...	...	13	14,09,977
6,61,661	6,30,412	5,52,510	7,06,800	...	...	32	12,59,342
6,55,125	9,02,394	4,55,122	7,91,050	...	...	57	12,46,239
6,64,616	7,07,706	4,36,396	8,20,860	...	...	109	12,57,305
7,70,005	4,14,924	5,15,914	7,96,626	...	...	5	13,11,945
6,06,528	6,52,079	5,60,418	4,03,886	...	...	256	9,70,560
6,98,955	5,85,898	5,37,637	7,59,280	...	...	43	12,06,960
6,52,742	6,24,488	5,49,027	5,84,583	...	...	150	11,33,760

OFFICIAL YEARS.	District.	Opening Balance.	Manufactured.	Spontaneous Salt.	Received from other Districts.	Gain by weight.	Miscellaneous.	Total received.	Home Consumption.	
									Retail.	Wholesale.
1	2	3	4	5	6	7	8	9	10	11
1865-6	NELLOR.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
1866-7		10,03,767	8,29,730	...	...	14,418	7,812	18,55,737	2,55,411	11,400
1867-8		9,55,500	6,08,899	...	...	40,732	4	15,05,135	2,43,661	10,602
1868-9		9,74,366	8,22,260	...	...	11,891	513	18,08,570	2,72,645	...
1869-70		10,61,923	4,91,449	...	...	2,860	272	14,59,869	2,70,333	1,140
1870-1		7,30,882	6,83,575	...	...	751	14	14,20,222	2,83,611	...
1871-2		8,41,518	3,02,518	...	...	413	3	11,44,552	2,79,692	...
1872-3		5,46,692	7,69,279	...	...	1,272	31	13,17,274	2,79,219	...
1873-4		5,58,119	4,93,514	...	...	232	7	10,51,872	2,88,722	1,130
1874-5		3,84,073	9,37,931	...	...	51	3	13,41,213	2,83,019	...
1874-5		6,27,671	5,71,117	...	...	10	5	11,98,893	2,88,952	...
First 5 yrs. average.		9,45,277	6,70,783	...	...	14,130	1,783	15,31,973	2,65,143	4,628
Last 5 yrs. average.		5,91,615	6,18,722	...	...	395	10	12,10,743	2,83,921	228
Ten yrs. average.		7,68,443	6,44,752	...	...	7,263	997	14,21,358	2,74,532	2,428
1865-6	CHINGLPUT.	13,81,412	15,85,598	...	...	7,171	42	33,74,223	...	...
1866-7		12,65,932	20,33,731	...	...	400	25	36,66,666	...	...
1867-8		19,43,531	19,04,211	...	...	74	8	...	...	...
1868-9		22,58,565	8,31,500	...	...	...	...	...	...	...
1869-70		15,31,976	19,58,332	...	...	...	...	...	...	...
1870-1		16,84,403	15,20,122	...	...	...	...	...	...	...
1871-2		14,97,810	21,39,108	...	...	...	...	...	...	...
1872-3		20,94,527	10,42,708	...	...	42	1	31,37,279	1,01,834	68,970
1873-4		14,92,657	18,46,624	...	...	...	...	33,39,231	1,06,387	49,590
1874-5		16,05,932	7,79,237	...	...	...	4	23,84,473	58,423	88,943
First 5 yrs. average.		16,86,395	18,02,775	...	...	1,533	22	34,90,635	1,02,510	80,227
Last 5 yrs. average.		16,74,927	14,67,760	...	...	8	3	31,42,698	87,642	94,925
Ten yrs. average.		16,80,616	16,35,267	...	...	771	13	33,16,667	95,076	87,426
1865-6	SOUTH ARCOT.	8,81,412	1,58,945	...	...	1	50	10,50,408	2,15,239	...
1866-7		5,27,496	4,74,111	...	...	190	68	10,01,865	1,93,543	...
1867-8		5,15,635	3,33,914	...	...	1,394	71	8,56,044	2,06,059	2,280
1868-9		3,96,434	3,65,732	...	...	1,783	140	7,55,989	2,22,263	...
1869-70		3,00,117	5,53,094	...	...	324	20	8,55,165	2,60,518	...
1870-1		3,92,666	4,85,271	...	...	555	25	8,78,427	2,27,069	...
1871-2		5,19,841	3,96,830	...	...	124	5	9,16,300	2,08,710	...
1872-3		5,25,592	22,579	...	...	16	...	5,48,187	2,01,349	...
1873-4		1,10,378	3,08,977	...	59,996	294	17	4,79,562	1,79,766	...
1874-5		1,49,461	1,26,932	...	1,46,090	194	8	4,21,785	1,76,550	...
First 5 yrs. average.		5,24,225	3,74,741	...	...	738	70	8,99,774	2,19,524	456
Last 5 yrs. average.		3,39,518	2,67,938	...	41,217	298	11	6,48,952	1,98,689	...
Ten yrs. average.		4,31,886	3,21,340	...	20,609	486	40	7,74,363	2,09,107	228
1865-6	TANJORE.	2,55,834	8,44,030	1,08,435	...	3,524	...	12,09,833	1,65,952	2,71,320
1866-7		4,51,737	8,81,570	2,49,964	...	958	1	15,84,270	82,070	3,07,800
1867-8		8,92,942	6,60,534	76,370	...	17,761	3	16,47,610	80,940	3,46,660
1868-9		8,76,156	5,70,624	25,950	...	9,432	...	14,82,162	65,539	4,18,380
1869-70		7,61,567	7,51,229	17,275	...	8,461	...	15,38,532	31,232	3,96,720
1870-1		7,82,377	5,51,466	9,494	...	243	...	13,43,580	49,324	3,34,020
1871-2		6,45,353	6,18,110	23,048	...	2,621	...	12,89,618	1,29,373	2,01,780
1872-3		5,06,730	4,31,701	2,633	...	1,756	...	9,33,070	1,98,383	1,98,360
1873-4		1,25,392	8,33,922	2,04,840	...	424	...	11,64,578	1,87,378	1,29,960
1874-5		4,46,903	8,14,318	16,492	...	6,132	...	12,83,245	1,90,060	2,20,020
First 5 yrs. average.		6,47,659	7,41,597	95,189	...	8,023	1	14,92,479	84,966	3,48,156
Last 5 yrs. average.		5,01,328	6,47,903	51,451	...	2,235	...	12,02,517	1,49,909	2,16,848
Ten yrs. average.		5,74,494	6,94,750	73,372	...	5,129	...	13,47,648	1,17,433	2,82,492

SALES.									
SUMPTION.		INLAND CONSUMPTION.				TOTAL SALES.			
sale.	Total Home Consump- tion.	Retail.	Wholesale.		Total Inland Consump- tion.	Retail.	Wholesale.		Total.
Special.			Ordinary.	Special.			Ordinary.	Special.	
12	13	14	15	16	17	18	19	20	21
I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
...	2,66,811	1,42,057	2,88,420	...	4,30,477	2,97,468	2,99,329	...	6,97,283
...	2,54,263	1,51,340	1,74,192	...	3,25,552	3,93,601	1,84,791	...	5,79,795
...	2,72,645	1,51,338	2,21,160	...	3,72,498	4,23,983	2,21,160	...	6,45,143
...	2,71,523	1,37,392	1,97,220	51,195	3,85,807	4,07,775	1,98,260	51,195	6,57,330
...	2,83,611	1,31,937	1,23,120	...	2,65,057	4,25,548	1,23,120	...	5,48,653
...	2,79,692	1,69,976	1,20,840	...	2,90,816	4,49,668	1,20,840	...	5,70,568
...	2,79,219	1,44,392	2,50,800	...	3,95,162	4,23,581	2,50,800	...	6,74,381
...	2,89,862	1,45,522	2,05,240	...	3,52,862	4,35,244	2,07,430	...	6,42,724
...	2,83,019	2,06,331	1,96,080	...	4,02,661	4,89,900	1,96,080	...	6,55,969
...	2,88,952	1,85,346	1,99,064	...	3,84,410	4,74,298	1,99,064	...	6,73,362
...	2,69,770	1,44,813	2,60,822	10,239	3,55,874	4,69,955	2,65,430	10,239	6,25,644
...	2,84,149	1,70,817	1,94,625	...	3,65,242	4,54,538	1,94,553	...	6,49,391
...	2,76,960	1,57,715	1,97,724	5,119	3,60,558	4,32,247	2,00,152	5,119	6,97,513
...	1,76,235	39,450	16,76,302	...	11,09,752	1,52,828	11,33,159	...	12,85,987
...	1,82,584	32,955	10,32,270	...	10,65,225	1,36,309	11,11,500	...	12,47,809
...	1,94,672	41,681	11,17,770	56,938	11,96,387	1,59,703	12,00,420	56,938	13,91,059
...	1,92,577	38,759	1,30,560	7,616	10,76,770	1,25,867	11,14,920	28,566	12,69,347
10,710	1,44,274	22,479	1,12,520	10,710	11,82,509	1,36,003	12,24,360	21,420	13,81,789
...	2,06,418	68,385	10,32,430	...	11,48,816	1,67,934	11,91,309	...	13,55,234
...	2,29,769	55,817	9,45,932	...	10,62,549	1,28,636	11,03,682	...	12,32,318
...	1,70,804	4,89,093	5,97,563	...	10,86,661	5,90,832	5,66,333	...	12,57,465
...	1,55,977	9,74,791	1,29,270	...	10,35,061	10,81,178	1,65,860	...	12,51,038
...	1,48,366	5,19,577	5,27,434	...	11,47,911	3,79,009	9,16,377	...	12,65,377
6,331	1,89,068	38,432	10,76,614	11,052	11,26,123	1,40,942	11,56,871	17,353	13,15,196
3,165	1,82,267	3,81,024	7,14,926	...	10,96,022	4,68,796	3,02,551	...	12,78,287
...	1,85,667	2,09,763	8,95,785	5,526	11,11,074	3,04,839	9,82,211	8,631	12,96,741
...	2,15,239	1,43,708	...	...	1,43,708	3,58,947	...	...	3,58,947
...	1,93,543	1,36,665	...	...	1,36,665	3,30,208	...	...	3,30,208
...	2,08,339	1,44,038	...	...	1,44,038	3,59,097	2,280	...	3,52,377
...	2,22,263	1,71,678	...	...	1,71,678	3,99,941	...	...	3,99,941
...	2,60,518	1,21,066	...	...	1,21,066	3,81,584	...	...	3,81,584
...	2,27,069	73,305	...	...	73,305	3,00,375	...	...	3,00,375
...	2,03,710	1,22,816	...	...	1,22,816	3,31,526	...	...	3,31,526
...	2,01,349	1,52,659	...	...	1,52,659	3,54,008	...	...	3,54,008
...	1,79,766	86,563	...	...	86,563	2,76,129	...	...	2,76,129
...	1,76,550	65,694	...	...	65,694	2,42,244	...	...	2,42,244
...	2,19,980	1,43,431	...	...	1,43,431	3,62,955	456	...	3,63,411
...	1,98,689	1,02,168	...	...	1,02,168	3,00,857	...	...	3,00,857
...	2,09,335	1,22,799	...	...	1,22,799	3,31,906	228	...	3,32,134
19,920	4,56,252	69,499	1,15,700	...	1,82,199	2,34,551	3,91,020	19,920	6,15,491
...	3,89,870	21,426	1,98,360	...	2,19,786	1,03,496	5,06,160	...	6,39,656
10,580	4,58,480	17,378	2,00,540	...	2,18,018	93,318	5,47,200	10,580	6,56,488
3,258	4,37,177	15,560	1,33,380	2,160	1,51,160	81,099	5,51,760	5,418	6,38,277
...	4,27,952	35,145	1,66,440	...	2,01,583	60,377	5,63,160	...	6,29,537
...	3,77,544	31,963	1,50,360	...	2,25,843	78,487	5,24,400	...	6,02,887
...	3,31,158	28,490	2,98,630	...	3,27,170	1,57,868	5,90,460	...	6,58,328
...	3,97,293	35,427	2,39,020	...	2,95,247	2,34,360	4,58,280	...	6,92,640
...	3,17,538	30,178	2,26,040	...	3,02,218	2,23,726	4,56,036	...	6,78,756
...	4,10,109	91,804	2,10,900	...	3,02,704	3,81,586	4,39,920	...	7,12,813
6,332	4,39,954	51,802	1,63,704	432	1,95,938	1,16,768	5,11,860	7,264	6,35,892
...	3,66,723	45,372	2,57,184	...	3,02,556	1,95,272	4,74,012	...	6,39,381
3,416	4,03,341	28,587	2,10,441	216	2,49,247	1,58,020	4,92,956	3,632	6,52,583

OFFICIAL YEARS.	Districts.	WASTAGE.				Exported beyond the Presidency.	Sold to French Government.	Sent to other Districts.	Miscellaneous.
		Retail.	Ordinary Discount.	Special Discount.	Total.				
1	2	22	23	24	25	26	27	28	29
1865-6	NELLORE.	1. Mds. 84,701	1. Mds. 15,780	1. Mds. ...	1. Mds. 1,00,481	1. Mds. 1,02,452	1. Mds. ...	1. Mds. ...	1. Mds. 6
1866-7		3,277	9,726	...	13,003	38,027	...	...	4
1867-8		76,132	11,640	13,758	1,01,530	348	...	...	21
1868-9		54,821	10,440	14,878	80,139	1,452	...	...	6
1869-70		18,502	6,480	...	24,982	5,040	...	...	14
1870-1		20,939	6,360	...	27,349	...	...	...	3
1871-2		16,109	13,200	...	29,309	...	...	35,434	31
1872-3		14,143	10,920	...	25,063	...	...	...	7
1873-4		17,226	10,320	...	27,546	...	...	...	16
1874-5		18,195	10,477	...	28,673	...	...	...	5
First 5 yrs. av....		47,487	10,813	5,727	64,027	29,464	...	...	11
Last 5 yrs. average.		17,333	10,258	...	27,588	...	...	11,087	12
Ten yrs. average.		32,410	10,534	2,864	45,808	14,732	...	5,543	11
1865-6	CHINGLEPUT.	48,326	59,641	...	1,07,967	6,73,173	...	41,110	4
1866-7		27,439	58,500	...	85,939	3,17,946	...	4,890	6
1867-8		18,598	63,180	8,664	90,432	1,07,828	...	...	...
1868-9		17,202	58,680	5,040	80,922	1,57,860	...	...	...
1869-70		58,032	64,440	3,780	1,24,252	2,58,000	...	...	...
1870-1		13,709	62,700	...	81,409	2,70,080	...	...	...
1871-2		15,019	58,089	...	73,108	2,47,972	...	...	...
1872-3		90,369	35,060	...	1,25,429	2,61,703	...	...	...
1873-4		1,32,935	8,940	...	1,41,875	2,81,136	...	60,000	...
1874-5		25,709	48,230	5,312	79,251	2,93,760	...	93,200	...
First 5 yrs. av....		33,527	66,888	3,497	97,912	3,21,437	...	9,182	2
Last 5 yrs. average.		56,548	42,608	1,662	1,00,218	2,72,119	...	30,640	...
Ten yrs. average.		45,037	51,748	2,280	99,063	2,96,778	...	19,911	1
1865-6	SOUTH ARCOT.	93,819	...	...	93,819	49,440	20,705	...	...
1866-7		56,041	...	5,851	61,892	52,800	41,300	...	...
1867-8		39,165	120	17,836	57,121	9,060	41,052	...	...
1868-9		20,294	...	60	20,354	...	20,677	...	...
1869-70		19,210	...	...	19,210	...	62,105	...	...
1870-1		16,785	...	...	16,785	...	41,426	...	...
1871-2		22,354	...	...	22,354	...	37,325	...	...
1872-3		33,775	...	...	33,775	...	50,125	...	...
1873-4		13,348	...	...	13,348	...	40,614	...	10
1874-5		19,430	...	...	19,430	...	42,086	...	...
First 5 yrs. av....		45,708	24	4,749	50,479	22,260	37,168	...	...
Last 5 yrs. average.		21,128	...	...	21,138	...	42,316	...	2
Ten yrs. average.		33,422	12	2,375	35,800	11,130	39,742	...	1
1865-6	TANJORE.	3,635	29,580	2,880	27,095	72,240	13,200	...	...
1866-7		1,632	25,610	...	28,332	42,540	10,800	...	...
1867-8		2,216	23,800	1,020	32,036	69,720	13,200	...	...
1868-9		4,216	29,040	582	33,838	37,680	10,800	...	...
1869-70		17,418	29,640	...	47,058	67,560	12,000	...	...
1870-1		12,054	27,900	...	39,954	44,400	10,800	...	...
1871-2		24,760	28,340	...	53,100	62,640	10,800	...	...
1872-3		36,468	24,120	...	60,588	44,860	9,600	...	...
1873-4		3,719	24,000	...	27,719	...	10,800	...	...
1874-5		9,313	22,680	...	31,993	7,200	10,800	...	...
First 5 yrs. av....		5,835	28,340	806	33,672	57,948	12,600	...	...
Last 5 yrs. average.		17,267	24,948	...	42,215	51,818	10,560	...	...
Ten yrs. average.		11,551	25,944	448	37,943	44,883	11,280	...	...

Grand Total Expended.	Closing Balance.	REALIZATIONS.						
		Retail.	Wholesale.	Exported beyond the Presidency.	Sold to French Government.	Miscellaneous	Total.	
		30	31	32	33	34	35	36	37
1. Mds.	1. Mds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
9,00,227	9,55,500	6,08,788	4,50,157	15,268	...	31	10,69,344	
6,30,829	9,74,306	6,66,564	3,11,840	5,703	...	15	9,84,123	
7,47,042	10,61,923	7,13,472	3,73,208	52	...	182	10,85,914	
7,88,927	7,90,882	6,88,119	4,21,124	218	...	41	11,09,592	
5,75,704	2,41,516	7,88,774	2,41,669	546	...	44	10,50,973	
3,97,860	5,46,692	8,90,456	2,41,680	...	...	87	11,41,223	
7,29,155	5,58,119	8,47,162	5,01,690	...	...	213	13,49,011	
6,67,794	3,81,978	8,70,483	4,14,960	...	...	270	12,85,718	
7,13,542	6,27,671	9,79,800	3,92,160	...	...	120	13,72,680	
7,02,040	4,96,769	9,43,596	3,98,123	...	...	240	13,46,964	
7,19,146	9,12,327	6,92,543	3,59,588	4,378	...	62	10,55,571	
6,84,078	5,22,665	9,69,100	3,89,706	...	...	152	12,58,399	
7,08,612	7,47,746	8,00,822	3,74,646	2,189	...	128	11,77,785	
21,08,241	12,85,982	2,33,528	17,19,191	1,00,976	...	2,134	20,55,829	
16,86,550	19,45,391	2,39,022	18,73,946	47,692	...	926	21,52,586	
15,32,319	22,58,565	2,59,374	20,88,038	16,174	...	67	23,63,653	
15,34,123	15,81,376	2,12,400	19,29,623	22,653	...	292	21,54,563	
13,73,015	16,81,493	2,46,382	22,88,197	32,601	...	182	25,86,742	
17,06,723	14,97,810	3,27,869	23,82,600	38,882	...	63	27,48,916	
15,53,338	20,94,527	2,57,272	22,07,355	34,253	...	23	24,98,913	
16,44,622	14,92,557	11,81,363	13,33,065	37,807	...	28	25,52,463	
17,34,049	16,05,232	21,62,355	1,35,720	42,224	...	53	25,44,338	
17,67,528	6,16,945	7,57,939	18,32,754	42,434	...	10,215	26,48,492	
17,43,729	17,46,905	2,36,342	19,79,799	47,842	...	702	22,64,585	
16,84,264	14,61,434	9,37,171	16,19,101	58,960	...	2,073	25,97,610	
17,12,496	16,04,171	5,86,905	17,39,450	43,401	...	1,330	21,31,117	
5,22,912	5,27,496	5,42,032	...	7,415	2,564	1,789	5,53,921	
4,86,290	5,15,665	5,57,348	...	7,920	4,341	2,599	5,72,718	
4,59,610	3,26,434	5,95,008	...	1,359	4,543	2,528	6,03,438	
4,31,972	3,00,117	6,64,776	...	...	2,289	1,228	6,68,293	
4,62,999	3,92,566	7,01,992	...	...	6,874	4,081	7,12,947	
3,58,586	5,19,841	6,00,739	...	...	4,585	2,936	6,07,994	
3,91,208	5,25,592	6,63,052	...	...	4,131	2,338	6,69,521	
4,37,909	1,10,278	7,08,017	...	...	5,518	3,296	7,16,961	
3,39,101	1,49,461	5,52,237	...	...	4,570	2,670	5,69,597	
5,03,760	1,18,625	4,84,489	...	...	4,868	4,794	4,34,151	
4,73,318	4,26,456	6,12,235	...	3,339	4,262	2,427	6,22,268	
3,64,313	2,84,539	6,01,714	...	...	4,760	3,171	6,09,645	
4,18,816	3,55,547	6,02,974	...	1,670	4,511	2,799	6,13,954	
7,56,026	4,51,797	3,53,414	6,27,982	10,836	905	164	9,38,591	
6,91,328	8,02,942	1,74,650	8,54,145	6,381	1,898	4,551	10,41,625	
7,71,454	8,76,355	1,65,912	9,41,937	10,456	1,392	174	11,18,873	
7,29,595	7,61,567	1,26,853	9,40,239	4,571	1,201	193	10,89,962	
7,56,155	7,82,377	1,21,858	10,27,292	7,605	454	8,572	11,56,767	
6,37,741	6,45,839	1,56,070	10,48,800	4,997	1,590	1,101	12,13,456	
7,52,888	5,06,730	3,15,736	10,00,920	7,048	1,165	64	13,24,933	
8,07,678	1,25,392	4,68,720	9,16,560	3,068	958	113	15,91,413	
7,18,275	4,46,303	4,47,512	9,12,000	...	958	31	13,60,501	
7,62,806	5,20,493	3,63,786	8,61,840	810	1,111	1,107	14,23,654	
7,39,512	7,52,967	1,90,598	8,73,317	7,970	1,170	2,731	10,89,726	
7,53,877	4,48,940	3,90,545	9,48,024	3,384	1,157	483	13,43,783	
7,46,694	6,00,954	2,90,541	9,13,171	5,777	1,153	1,007	12,12,359	

Statement showing Salt transactions for Ten years.

[APPENDIX B.]

OFFICIAL YEARS.	Districts.	Opening Balance.	Manufactured.	Spontaneous Salt.	Received from other Districts.	Gain by weight.	Miscellaneous.	Total received.	HOME	
									Retail.	Wholesale.
1	2	3	4	5	6	7	8	9	10	11
1865-6	MADURA.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
1866-7		4,19,121	4,67,591	...	...	8,150	...	8,34,962	3,96,969	...
1867-8		4,16,389	4,04,269	1,520	...	4,835	15	8,26,769	3,04,205	...
1868-9		4,03,346	3,33,236	...	...	1,170	20	5,27,802	1,83,223	1,47,069
1869-70		4,08,539	3,33,298	...	...	28	...	7,72,585	1,95,028	1,55,414
1870-1		3,99,592	2,82,679	629	...	3,363	...	6,86,323	3,45,311	...
1871-2		3,31,578	1,63,684	...	...	1,747	...	4,97,009	3,07,549	1,140
1872-3		1,75,192	3,66,341	1,237	...	227	...	5,43,297	2,73,654	...
1873-4		2,62,883	3,15,935	495	...	49	...	6,09,262	2,45,129	12,631
1874-5		3,42,682	3,89,898	23,177	...	12	3	5,95,563	2,41,805	...
First 5 yrs. av....		4,35,481	3,52,547	406	...	3,509	7	7,89,670	2,85,821	60,895
Last 5 yrs. average		2,91,140	3,03,605	5,585	...	408	1	6,00,740	2,82,383	3,555
Ten yrs. average		3,63,271	3,27,976	2,996	...	1,958	4	6,95,205	2,84,102	32,281
1865-6	TINNEVELLY.	11,20,393	4,02,958	...	...	20,403	1	15,52,755	3,50,343	9,120
1866-7		8,15,658	5,44,806	...	...	1,588	...	13,62,632	2,47,167	1,33,120
1867-8		9,32,195	5,01,974	...	...	1,329	...	14,42,489	2,59,772	1,08,300
1868-9		9,97,184	3,07,629	...	...	3,933	...	13,09,746	3,55,304	11,400
1869-70		8,42,140	3,39,071	...	...	2,223	...	11,83,454	3,46,434	...
1870-1		6,63,747	2,85,217	...	...	2,229	...	9,51,193	3,39,163	...
1871-2		1,35,209	3,27,785	...	...	1,268	...	9,64,253	3,85,223	15,950
1872-3		3,16,344	5,78,284	...	...	1,646	...	8,96,974	3,19,142	1,32,378
1873-4		3,24,591	7,86,237	...	...	901	...	11,22,439	3,44,466	68,992
1874-5		5,12,996	7,63,114	...	...	1,479	350	13,57,959	3,92,606	12,510
First 5 yrs. av....		9,44,714	4,10,283	...	...	5,893	...	13,69,395	3,11,345	50,388
Last 5 yrs. average		4,72,698	5,86,287	...	...	1,505	70	10,00,560	3,56,193	44,374
Ten yrs. average		7,08,706	5,02,787	...	...	3,699	25	12,15,227	3,91,031	47,681

1865-6	EAST COAST.	68,24,199	63,42,402	1,26,449	...	57,435	8,027	1,33,58,812	23,29,743	3,73,777
1866-7		59,01,743	74,49,616	2,52,694	...	51,443	652	1,36,55,550	28,57,265	6,46,152
1867-8		73,78,700	59,96,788	76,370	...	35,906	604	1,34,83,458	19,44,135	7,58,976
1868-9		72,77,253	51,27,615	26,151	...	18,488	596	1,34,59,408	19,60,660	7,43,454
1869-70		61,74,535	72,49,731	18,213	...	15,144	788	1,34,57,411	21,74,831	5,48,340
1870-1		71,07,130	40,25,252	11,755	...	5,644	238	1,17,50,069	20,01,345	6,01,350
1871-2		55,19,264	69,51,092	27,467	51,492	5,840	205	1,24,58,931	21,28,795	5,76,270
1872-3		60,38,878	51,10,547	3,378	...	3,773	698	1,11,56,274	21,33,236	6,31,219
1873-4		48,06,329	69,69,363	2,04,886	59,936	1,763	70	1,31,02,347	21,32,882	5,26,262
1874-5		57,50,144	50,53,872	40,321	140,090	7,953	418	1,10,08,799	23,41,095	6,53,420
First 5 yrs. av....		67,11,346	64,32,911	29,976	...	35,681	2,212	1,32,82,126	20,25,125	6,19,139
Last 5 yrs. average		58,57,559	57,22,008	57,561	52,715	4,991	330	1,16,94,953	21,79,671	5,97,705
Ten yrs. average		62,84,651	60,77,459	72,763	26,358	20,331	1,475	1,24,88,543	21,02,898	6,08,422

APPENDIX B.]

Statement showing Salt transactions for Ten years.

21

SALES.									
CONSUMPTION.		INLAND CONSUMPTION.				TOTAL SALES.			
sale.	Total Home Consumption.	Retail.	Wholesale.		Total Inland Consumption.	Retail.	Wholesale.		Total.
Special.			Ordinary.	Special.			Ordinary.	Special.	
12	13	14	15	16	17	18	19	20	21
1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
21,721	3,66,309	9,827	...	...	9,827	4,06,136	...	...	4,06,136
34,560	3,66,309	952	...	...	952	3,66,309	...	21,721	3,26,878
2,072	3,66,309	336	...	...	336	1,99,559	1,47,069	34,560	3,70,179
...	3,66,309	334	...	...	334	1,95,422	1,57,414	2,072	3,45,908
...	3,45,341	...	...	...	...	3,45,341	...	...	3,45,341
...	3,08,680	...	...	...	...	3,08,680	...	...	3,08,680
...	2,73,654	18	...	...	18	2,73,654	1,140	...	2,73,654
...	2,67,790	620	...	...	620	2,45,749	12,631	...	2,58,380
...	2,41,805	1,088	...	...	1,088	2,42,893	...	...	2,42,893
...	3,51,337	7,114	...	...	7,114	3,53,891	4,560	...	3,58,451
11,670	3,58,396	2,502	...	...	2,502	2,88,123	60,895	11,670	3,60,689
...	2,86,649	1,768	...	...	1,768	2,84,751	3,606	...	2,88,417
5,835	3,22,518	2,035	...	...	2,035	2,86,437	32,281	5,835	3,24,532
...	3,59,063	53,048	...	...	33,048	3,83,891	9,120	...	3,93,011
...	3,70,287	20,594	...	...	20,594	2,67,561	1,23,120	...	3,90,681
...	3,68,079	50,171	...	...	50,171	3,09,950	1,08,300	...	4,18,250
...	3,66,304	45,581	...	...	45,581	4,01,085	11,400	...	4,12,485
42,168	3,88,602	41,900	...	...	41,900	3,86,334	...	42,168	4,30,602
39,396	3,78,564	53,062	...	...	53,062	3,92,230	...	39,396	4,31,626
...	4,01,193	1,05,696	...	...	1,05,696	4,30,929	15,950	...	5,06,889
...	4,51,520	95,637	...	...	95,637	4,14,829	1,32,378	...	5,47,207
...	4,68,458	87,684	...	...	87,684	4,32,150	63,992	...	4,96,142
...	4,05,146	89,964	...	...	89,964	4,82,570	12,540	...	4,95,110
8,434	3,70,767	33,219	...	...	33,219	3,50,164	50,588	8,434	4,08,985
7,879	4,08,976	86,419	...	...	86,419	4,42,542	44,374	7,879	4,95,295
8,156	3,59,371	62,319	...	...	62,319	3,96,333	47,681	8,156	4,52,199

22,082	27,25,552	7,21,355	21,58,162	13,728	28,93,225	30,51,073	25,31,939	35,760	56,18,777
21,721	25,25,138	6,33,331	22,45,204	...	28,73,535	24,90,536	28,91,356	21,721	54,03,673
45,540	26,48,651	7,04,510	21,61,123	38,936	29,02,572	25,43,645	29,20,132	82,475	55,51,223
26,274	27,64,289	3,92,864	13,33,440	60,971	28,97,275	28,62,524	27,01,894	87,245	56,54,663
52,878	27,76,052	8,25,517	18,14,504	19,710	30,60,232	30,10,062	25,62,644	63,589	54,86,284
39,396	27,32,091	9,26,610	18,34,800	...	27,61,440	30,17,955	24,50,180	29,396	54,93,581
...	27,05,065	3,52,076	19,18,212	...	28,70,258	30,80,871	24,24,152	...	55,75,353
19,330	28,03,785	19,37,772	13,95,553	...	27,53,335	35,10,378	20,26,792	39,330	55,67,120
...	26,55,144	19,69,695	9,50,310	...	29,29,205	41,73,777	14,85,572	...	55,94,549
...	29,94,515	14,29,411	13,43,894	...	27,72,835	37,72,536	19,96,814	...	57,67,350
33,689	26,87,953	7,57,453	20,62,146	24,469	28,44,368	27,92,578	26,81,585	58,158	55,32,821
11,745	27,80,121	13,27,158	14,09,262	...	28,17,490	34,97,829	20,87,367	11,745	53,97,341
22,717	27,34,037	10,42,305	17,76,354	12,234	28,30,894	31,45,264	23,84,776	34,932	53,64,931

OFFICIAL YEARS.	Districts.	WASTAGE.				Exported beyond the Presidency.	Sold to French Government.	Sent to other Districts.	Miscellaneous.
		Retail.	Ordinary Discount.	Special Discount.	Total.				
		22	23	24	25	26	27	28	29
1865-6	MADURA.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
1866-7		8,737	...	...	8,737	3,600	...	...	...
1867-8		5,453	...	1,091	6,544	...	...	...	...
1868-9		7,484	7,740	3,840	19,064	...	...	...	...
1869-70		9,571	8,384	230	18,085	...	...	...	...
1870-1		9,414	...	...	9,414	...	...	...	...
1871-2		13,077	60	...	13,137	...	...	...	...
1872-3		9,025	...	407	9,432	...	...	...	...
1873-4		6,949	664	...	7,613	...	...	...	...
1874-5		9,988	...	...	9,988	...	...	...	...
First 5 yrs. av. ...		8,132	3,225	1,092	12,569	720	...	...	...
Last 5 yrs. average		10,853	193	119	11,170	...	...	...	...
Ten yrs. average.		9,493	1,658	576	11,769	360	...	...	...
1865-6	TINNEVELLY.	7,546	450	...	8,026	2,22,660	...	...	...
1866-7		9,576	6,480	...	16,156	16,020	...	...	...
1867-8		14,875	2,700	...	20,335	6,720	...	...	...
1868-9		30,541	600	...	31,141	22,980	...	...	...
1869-70		58,753	...	16,622	75,375	42,300	...	...	...
1870-1		53,731	...	19,546	73,277	41,040	...	...	...
1871-2		42,140	840	...	42,980	97,140	...	...	...
1872-3		8,199	6,367	...	14,566	...	...	...	...
1873-4		9,933	3,858	...	13,801	...	...	...	...
1874-5		20,059	600	...	20,719	1,18,140	...	2,30,497*	...
First 5 yrs. av. ...		18,230	2,432	3,327	24,209	85,116	...	...	...
Last 5 yrs. average		22,823	2,357	3,909	29,099	51,334	...	46,093	...
Ten yrs. average.		20,526	2,510	3,618	26,654	63,250	...	23,650	...

1865-6	EAST COAST.	3,26,860	1,33,261	5,040	4,75,161	12,86,965	34,986	41,110	70
1866-7		1,51,109	1,32,177	6,942	3,10,228	5,04,733	53,150	4,800	236
1867-8		2,10,908	1,53,659	45,118	4,09,715	1,95,176	51,972	...	119
1868-9		2,09,021	1,32,304	20,790	3,72,015	2,19,872	32,197	...	21
1869-70		2,22,014	1,24,350	20,412	3,66,776	4,72,180	74,225	...	103
1870-1		1,80,674	1,23,220	19,546	3,23,440	3,55,520	53,308	...	3
1871-2		2,01,940	1,31,289	407	3,33,636	4,08,032	49,848	55,434	130
1872-3		2,56,532	1,05,671	1,662	3,64,765	3,05,558	60,446	...	36
1873-4		2,74,198	78,188	...	3,52,386	2,83,296	52,134	60,000	53
1874-5		2,49,593	1,05,095	5,502	3,60,195	4,71,985	53,605	3,91,167	3
First 5 yrs. av. ...		2,25,963	1,31,136	19,660	3,86,779	5,35,865	50,632	9,182	124
Last 5 yrs. average		2,56,583	1,09,893	5,402	3,71,883	3,65,082	50,668	1,01,320	43
Ten yrs. average		2,26,235	1,25,514	12,531	3,64,331	4,50,419	51,850	55,251	36

* Exported to Malabar by Contractors for Government.

Grand Total Expended.	Closing Balance.	REALIZATIONS.					
		Retail.	Wholesale.	Exported beyond the Presidency.	Sold to French Government.	Miscellaneous.	Total.
		30	31	32	33	34	35
1. Mds.	1. Mds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
4,18,473	4,16,389	6,14,128	...	540	...	153	6,14,891
3,33,422	4,33,346	5,14,553	36,654	...	...	574	5,52,181
3,89,243	4,33,559	3,18,194	2,05,484	...	...	156	6,24,834
3,72,993	3,00,592	3,29,774	2,63,131	...	...	109	5,99,014
3,54,753	3,31,578	6,31,824	...	...	...	116	6,31,940
3,21,817	1,75,182	6,15,079	2,280	...	...	264	6,17,623
2,82,114	2,62,883	5,40,029	7,334	...	...	133	5,47,495
2,65,993	3,43,369	4,91,500	25,260	...	...	264	5,17,024
2,62,381	3,42,682	4,55,785	...	...	...	285	4,86,070
3,74,132	3,81,640	7,07,781	9,120	...	...	128	7,17,029
3,73,727	4,15,893	4,81,789	5,22,454	108	...	221	6,04,572
2,93,587	3,01,153	5,68,035	8,798	...	...	215	5,77,048
3,38,662	3,58,523	5,24,912	65,626	51	...	218	5,90,810
7,37,097	8,15,658	5,79,605	14,963	50,409	...	96	6,45,073
4,22,857	9,39,195	4,51,509	2,07,765	2,403	...	56	6,61,733
4,45,305	9,97,184	5,23,041	1,82,736	1,608	...	20	7,06,825
4,66,606	8,42,140	6,76,831	19,238	2,489	...	52	6,98,610
5,19,687	6,83,747	7,01,752	79,429	4,745	...	100	7,86,026
5,15,993	4,35,200	7,83,322	80,566	4,456	...	70	8,68,404
6,47,309	3,15,944	9,81,858	30,360	10,556	...	19	10,22,733
5,82,373	3,34,601	8,29,658	2,57,567	...	...	50	10,87,275
5,09,443	6,12,006	8,64,300	1,27,984	...	...	3,865	9,96,149
8,74,766	4,93,173	9,65,140	25,030	37,802*	...	13,350	10,41,372
5,18,311	8,51,584	5,86,547	1,00,830	12,211	...	65	6,99,653
6,21,977	4,38,583	8,84,856	1,04,311	10,561	...	3,471	10,03,199
5,70,144	6,45,083	7,35,701	1,02,571	11,386	...	1,768	8,51,426

74,57,069	59,01,743	46,17,359	38,94,293	1,93,945	3,652	5,308	87,13,668
62,76,850	73,78,100	42,03,006	49,14,107	75,710	6,942	9,779	92,09,544
62,11,205	72,77,253	43,05,058	50,63,010	29,262	6,004	4,977	94,08,313
62,75,868	61,74,535	48,30,507	47,06,673	29,646	3,557	1,946	95,72,334
63,50,231	71,07,160	55,57,241	45,18,032	65,662	7,394	13,487	1,01,61,862
62,30,805	55,19,254	60,34,890	49,52,926	47,825	6,274	4,367	1,10,47,280
64,21,453	60,36,873	61,54,493	49,94,738	51,857	5,363	4,481	1,12,10,346
62,68,945	48,66,329	70,22,017	40,85,022	42,575	6,572	4,431	1,11,60,617
63,42,293	57,60,144	82,17,555	29,71,144	42,530	5,694	7,544	1,12,44,467
70,14,311	39,94,488	75,92,141	39,96,620	87,654*	6,046	30,750	1,17,13,210
65,14,342	67,67,583	47,04,202	46,19,235	78,666	5,809	7,099	94,13,144
64,59,542	52,35,421	70,04,202	42,00,030	54,483	5,990	10,515	1,12,75,284
64,86,892	60,01,652	58,52,418	44,03,663	60,577	5,749	8,807	1,03,14,214

* Includes Rs. 24,971 received for salt exported to Malabar.

OFFICIAL YEARS.	District.	Opening Balance.	Salt purchased from Importers.	Manufactured.	Received from other Districts.	Gain by weightment.	Miscellaneous.	Total.	IMPORTED ON PRIVATE ACCOUNT.		Grand Total.	HOME CONSUMPTION.	
									From British Ports.	From Foreign Ports.		Retail.	Wholesale.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1865-6	SOUTH CANARA.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
1866-7		2,45,188	3,96,810	25,359	...	1,156	36	6,69,159	803	...	6,59,962	1,28,429	...
1867-8		2,70,992	2,19,699	1,23,144	...	5,548	44	6,18,827	...	...	6,18,827	1,50,873	...
1868-9		3,31,554	1,83,289	57,964	...	7,156	42	5,79,990	...	...	5,79,990	1,73,893	...
1869-70		3,19,542	3,19,542	30,680	...	2,178	36	5,70,114	...	82	5,70,196	1,75,706	...
1870-1		2,26,908	2,91,322	66,801	...	1,245	29	5,76,115	...	9,919	5,86,034	1,46,422	...
1871-2		3,01,118	3,13,057	59,955	...	3,448	61	5,68,619	797	12,937	5,82,053	1,96,374	...
1872-3		2,96,899	2,60,330	3,239	...	1,481	25	5,62,506	...	1,904	5,64,312	1,75,982	...
1873-4		2,20,792	4,06,960	10,251	...	1,051	90	6,39,114	...	22,777	6,61,891	1,35,230	...
1874-5		3,17,044	1,68,743	40,045	...	1,309	103	5,87,144	198	22,776	6,10,118	1,36,330	...
First 5 yrs. av.		2,58,244	2,90,176	69,909	...	3,472	37	6,02,842	161	2,600	6,05,603	1,66,063	...
Last 5 yrs. av.		3,02,951	2,48,913	23,659	...	1,094	145	5,78,062	283	16,288	5,94,633	1,43,571	...
Ten years' av.		2,80,597	2,69,595	43,784	...	2,583	91	5,90,450	222	9,144	5,99,816	1,54,817	...
1865-6	MALABAR.	2,47,682	5,18,422	...	59,274	694	20	8,26,092	...	...	8,26,092	3,25,800	68,766
1866-7		2,91,623	5,88,793	...	...	1,002	4	8,81,422	...	...	8,81,422	2,94,216	1,43,424
1867-8		4,03,827	4,95,648	...	...	1,015	1	9,00,491	...	...	9,00,491	2,66,232	2,01,083
1868-9		3,42,521	5,62,170	...	...	931	5	9,05,627	...	153	9,05,780	1,41,982	2,76,266
1869-70		3,47,723	5,68,838	...	...	481	2	9,17,044	...	...	9,17,044	1,47,707	2,56,430
1870-1		3,78,051	5,73,838	...	...	167	...	9,82,086	...	...	9,82,086	1,21,078	2,99,316
1871-2		4,02,714	5,68,411	...	...	132	...	9,71,257	...	...	9,71,257	1,48,054	2,89,091
1872-3		3,48,692	5,87,168	...	...	841	...	9,37,001	...	25	9,37,026	1,58,016	2,66,823
1873-4		3,41,256	5,89,254	...	...	767	3	9,31,256	2	190	9,31,467	1,34,771	2,69,918
1874-5		3,59,496	5,86,128	...	...	509	...	9,49,130	...	...	9,49,130	1,16,730	1,46,780
First 5 yrs. av.		3,26,675	5,46,774	...	11,855	824	6	8,86,134	...	32	8,86,166	2,23,191	1,87,994
Last 5 yrs. av.		3,64,838	5,81,026	...	...	483	2	9,46,349	...	45	9,46,394	1,55,860	2,52,587
Ten years' av.		3,45,757	5,63,900	...	5,927	652	4	9,16,241	...	38	9,16,279	1,89,521	2,20,291

1865-6	WEST COAST.	1,92,870	2,15,262	25,959	59,274	1,330	50	14,05,251	803	...	14,06,054	5,09,220	68,766
1866-7		5,62,015	8,08,492	1,23,144	...	6,550	48	15,00,249	...	...	15,00,249	3,85,591	1,43,424
1867-8		7,55,861	6,78,928	57,964	...	8,171	44	14,80,387	...	...	14,80,387	4,40,145	2,01,083
1868-9		5,60,212	5,81,792	30,680	...	3,166	41	14,75,741	...	240	14,75,981	3,17,689	2,76,266
1869-70		5,74,131	8,50,970	66,801	...	1,826	31	14,93,159	...	9,919	15,03,078	2,94,129	2,56,430
1870-1		6,79,169	7,86,925	50,925	...	3,015	61	15,20,705	797	12,637	15,33,139	2,57,482	2,99,316
1871-2		6,99,517	8,23,370	3,239	...	1,612	26	15,33,765	...	1,804	15,35,569	3,24,006	2,99,091
1872-3		8,69,450	9,94,483	10,251	...	1,992	90	15,76,115	...	22,802	15,98,917	2,99,280	2,66,823
1873-4		7,15,281	7,37,997	40,045	...	1,976	112	15,18,410	200	22,375	15,41,585	2,71,301	2,69,918
1874-5		6,72,523	7,64,474	23,323	...	1,792	447	14,73,059	418	21,447	14,94,504	3,50,648	1,46,780
First 5 yrs. av.		5,84,922	8,26,350	69,909	11,855	4,295	43	14,88,976	161	2,032	14,91,169	3,89,293	1,87,994
Last 5 yrs. av.		6,67,789	8,27,539	26,659	...	2,177	147	15,24,411	283	16,331	15,41,027	2,99,421	2,52,587
Ten yrs. av.		6,26,354	8,27,294	43,784	5,927	3,233	95	15,06,694	222	91,82	15,16,093	3,44,358	2,20,291

* Including 1. Mds. 2,30,497 imported from Tinnevely.

Dist.	SALES.						WASTAGE.		
	INLAND CONSUMPTION.			TOTAL SALES.			Retail.	Discount.	Total.
Total.	Retail.	Wholesale.	Total.	Retail.	Wholesale.	Total.			
15	16	17	18	19	20	21	22	23	24
1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
1,63,420	2,10,264	...	2,10,264	3,93,684	...	3,93,684	4,230	...	4,230
1,50,873	1,28,781	...	1,28,781	2,79,656	...	2,79,656	7,378	...	7,378
1,73,893	1,72,785	...	1,72,785	3,46,678	...	3,46,678	14,291	...	14,291
1,75,706	1,60,011	...	1,60,011	3,35,717	...	3,35,717	7,230	...	7,230
1,46,422	1,22,851	...	1,22,851	2,69,273	...	2,69,273	4,973	...	4,973
1,33,374	1,27,894	...	1,27,894	2,64,268	...	2,64,268	6,955	...	6,955
1,75,982	1,54,977	...	1,54,977	3,30,959	...	3,30,959	9,287	...	9,287
1,35,230	1,24,101	...	1,24,101	2,59,351	...	2,59,351	2,130	...	2,130
1,36,330	1,28,586	...	1,28,586	2,64,916	...	2,64,916	2,127	...	2,127
1,63,919	1,27,916	...	1,27,916	2,61,834	...	2,61,834	3,326	...	3,326
1,66,063	1,58,938	...	1,58,938	3,25,001	...	3,25,001	7,760	...	7,760
1,43,571	1,32,694	...	1,32,694	2,76,265	...	2,76,265	4,765	...	4,765
1,54,817	1,45,816	...	1,45,816	3,00,633	...	3,00,633	6,263	...	6,263
3,94,566	69,935	58,416	1,23,341	3,95,725	1,27,182	5,22,907	1,424	6,693	8,117
3,77,640	57,828	23,696	81,524	2,92,044	1,67,120	4,59,164	6,846	8,797	15,643
4,67,335	61,883	15,770	77,653	3,23,135	2,16,853	5,44,988	159	11,413	11,563
4,18,248	72,581	46,873	1,18,454	3,23,139	5,37,792	422	17,007	...	17,429
3,98,137	65,178	54,447	1,19,625	2,12,885	3,04,877	5,17,762	1,064	16,045	17,109
4,11,394	42,377	70,784	1,13,661	3,61,100	5,24,455	2,926	19,007	...	21,933
4,37,745	59,120	96,792	1,55,912	3,85,883	5,93,637	5,404	29,398	...	25,712
4,24,841	44,668	85,472	1,30,140	2,62,684	3,52,297	5,54,981	19,519	18,541	38,060
4,04,689	17,668	1,31,665	1,49,363	4,01,583	5,54,052	447	21,136	...	21,583
3,63,510	61,600	63,270	1,24,870	2,78,330	2,10,030	4,88,360	289	11,655	11,944
4,11,185	65,479	39,810	1,05,319	2,88,670	2,27,834	5,16,504	1,981	11,091	13,072
4,08,437	45,972	89,597	1,34,669	2,90,922	3,42,184	5,43,106	5,717	18,009	23,726
4,69,812	55,275	64,718	1,19,994	2,44,796	2,85,909	5,29,695	3,849	15,000	18,849

5,77,986	2,80,189	58,416	3,38,605	7,89,409	1,27,182	9,16,591	5,754	6,693	12,447
5,28,515	1,86,609	23,696	2,10,305	5,71,700	1,67,120	7,38,820	14,244	8,797	23,021
6,41,228	2,34,663	15,770	2,50,433	6,74,813	2,16,853	8,91,666	15,041	11,413	26,454
5,93,554	2,52,592	46,873	2,79,465	5,80,280	3,23,139	8,73,419	7,682	17,007	24,690
5,44,559	1,88,029	54,447	2,42,476	4,82,158	3,04,877	7,87,035	6,037	16,045	22,082
5,47,768	1,70,171	70,784	2,40,955	4,27,623	3,61,100	7,88,723	9,881	19,007	28,888
6,18,727	2,14,697	96,792	3,19,989	5,85,733	9,24,616	14,691	20,308	34,999	...
5,60,091	1,68,769	85,472	2,54,241	4,62,933	3,52,297	8,14,332	21,649	18,541	40,190
5,11,019	1,46,284	1,31,665	2,77,949	4,17,385	4,01,583	8,18,968	2,574	21,136	23,710
4,97,128	1,89,516	63,270	2,52,786	5,40,154	2,10,030	7,50,214	3,615	11,055	14,670
5,77,245	2,24,417	39,810	2,64,227	6,13,671	2,27,834	8,41,505	9,711	11,091	21,732
5,52,008	1,77,766	89,597	2,67,363	4,77,187	3,42,184	8,19,371	10,482	18,009	28,491
5,64,628	2,01,091	64,718	2,65,810	5,45,429	2,85,909	8,30,438	10,112	15,000	25,112

OFFICIAL YEARS.	Districts.	Sold to French Government.	Supplied to Amindivi Islands.	Miscellaneous.	Total expended on Government Account.	Import on private account.	Grand Total.	Closing Balance in Government Stores.
		25	26	27	28	29	30	31
1865-6	SOUTH CANARA.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
1866-7		...	733	...	3,93,767	803	3,93,570	2,76,992
1867-8		...	239	...	2,87,273	...	2,87,273	2,31,564
1868-9		...	736	...	3,62,305	...	3,62,305	2,17,691
1869-70		...	739	...	3,43,706	82	3,43,788	2,25,408
1870-1		...	751	...	2,74,997	9,919	2,84,916	3,01,118
1871-2		...	593	...	2,71,816	13,434	2,85,250	2,96,603
1872-3		...	1,500	...	3,41,746	1,804	3,43,550	2,20,762
1873-4		...	589	...	2,62,070	22,777	2,84,847	3,77,044
1874-5		...	1,074	...	2,65,117	22,974	2,91,091	3,12,027
First 5 yrs. av. ...		...	647	...	3,33,409	2,161	3,35,569	2,69,490
Last 5 yrs. average		...	935	...	2,81,935	16,571	2,98,506	2,96,007
Ten yrs. average.		...	791	...	3,07,687	9,366	3,17,053	2,82,763
1865-6	MALABAR.	3,425	...	20	5,34,469	...	5,34,469	5,91,623
1866-7		2,784	...	4	4,77,595	...	4,77,595	4,03,827
1867-8		1,418	...	1	5,57,970	...	4,57,970	3,42,121
1868-9		2,768	...	5	5,57,904	133	5,58,032	3,37,723
1869-70		4,120	...	2	5,38,993	...	5,38,993	3,78,051
1870-1		2,984	...	...	5,49,372	...	5,49,372	4,02,714
1871-2		3,196	...	...	6,22,565	...	6,22,565	3,48,692
1872-3		2,724	...	...	5,95,765	25	5,95,790	3,41,236
1873-4		2,126	...	7	5,77,768	201	5,77,969	3,63,456
1874-5		2,050	...	96	5,01,870	1	5,01,870	4,38,263
First 5 yrs. av. ...		2,903	...	6	5,33,385	32	5,33,417	3,52,749
Last 5 yrs. average		2,616	...	20	5,69,468	45	5,63,513	3,76,861
Ten yrs. average.		2,759	...	13	5,51,426	39	5,51,464	3,64,815

1865-6	WEST COAST.	3,425	753	20	9,33,236	803	9,34,039	5,62,015
1866-7		2,784	339	4	7,64,868	...	7,64,868	7,35,381
1867-8		1,418	736	1	9,20,275	...	9,20,275	5,60,212
1868-9		2,768	739	5	9,01,610	240	9,01,850	5,74,191
1869-70		4,120	751	2	8,13,990	9,919	8,23,909	6,79,169
1870-1		2,984	593	...	8,21,168	13,434	8,34,602	6,99,517
1871-2		3,196	1,500	...	9,64,311	1,804	9,66,115	5,69,454
1872-3		2,724	589	...	8,57,825	22,802	8,80,627	7,18,230
1873-4		2,126	1,074	7	8,45,385	23,175	8,69,560	6,72,593
1874-5		2,050	919	96	7,67,949	21,866	7,89,815	7,05,110
First 5 yrs. av. ...		2,903	647	6	8,66,793	2,193	8,68,986	6,22,179
Last 5 yrs. average		2,616	935	20	8,51,433	16,616	8,68,049	6,72,978
Ten yrs. average.		2,759	791	13	8,52,113	9,404	8,61,517	6,47,578

REALIZATIONS.								
Retail.	Wholesale.	Sold to French Government.	Sold to Amindivi Islanders.	Cost of carriage to Inland Depôts, recovered.	Miscellaneous.	Total.	Duty on private importations.	Grand Total.
32	33	34	35	36	37	38	39	40
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
5,93,490	...	...	527	5,941	1,045	6,06,103	1,255	6,07,358
4,71,919	...	...	157	3,287	89	4,80,462	...	4,80,462
5,84,979	...	...	492	9,290	1,199	5,95,890	...	5,95,890
5,56,562	...	...	324	7,623	1,220	5,75,729	123	5,75,852
5,09,534	...	...	389	4,594	1,661	5,16,178	17,947	5,34,125
5,23,536	...	...	285	3,949	...	5,32,770	24,360	5,57,130
6,61,918	...	...	675	2,880	27	6,65,500	3,273	6,68,773
5,18,702	...	...	307	1,405	413	5,20,828	41,284	5,62,112
5,29,532	...	...	554	1,495	34	5,31,925	41,667	5,73,592
5,33,368	...	...	433	2,167	...	5,35,018	39,631	5,74,649
5,46,497	...	...	380	6,953	1,042	5,54,872	3,865	5,58,737
5,51,871	...	...	463	2,379	95	5,57,808	30,043	5,87,851
5,50,654	...	...	421	4,666	539	5,66,340	16,354	5,82,694
5,98,892	1,91,199	1,481	...	...	30	7,91,602	...	7,91,602
4,93,472	2,79,373	1,262	...	...	6	7,74,118	...	7,74,118
5,53,723	3,65,939	643	...	...	2	9,20,312	...	9,20,312
3,02,075	5,45,296	1,378	...	...	55	9,09,804	247	9,09,051
3,98,905	5,51,664	2,110	...	...	123	9,52,802	...	9,52,802
3,26,710	7,22,203	1,528	...	...	116	10,50,557	...	10,50,557
4,15,543	7,71,763	1,492	...	...	330	11,89,133	...	11,89,133
4,95,368	7,04,592	1,220	...	...	109	11,11,239	46	11,11,285
3,04,339	8,03,166	952	...	...	434	11,09,491	364	11,09,855
5,58,411	4,28,146	911	...	...	272	9,87,740	1	9,87,741
4,81,415	3,86,695	1,375	...	...	43	8,69,523	49	8,69,572
4,02,195	6,85,974	1,231	...	...	252	10,89,442	82	10,89,524
4,41,805	5,36,334	1,238	...	...	148	9,79,585	66	9,79,651
11,98,352	1,91,199	...	...	5,941	1,075	13,97,705	1,255	13,98,960
9,65,391	2,79,378	...	...	3,287	...	12,54,580	...	12,54,580
11,38,707	3,65,939	...	...	9,290	1,201	15,16,202	...	15,16,202
9,28,637	5,45,296	...	...	7,623	1,275	14,84,533	370	14,84,903
9,08,439	5,51,664	...	...	4,594	1,784	14,68,980	17,947	14,86,927
8,55,246	7,22,203	...	...	3,949	116	15,83,327	24,360	16,07,687
10,77,466	7,71,763	...	...	2,880	357	18,54,633	3,273	18,57,906
9,24,070	7,04,592	...	...	1,406	522	16,32,117	41,330	16,73,447
8,34,771	8,03,166	...	...	1,495	463	16,41,416	42,031	16,83,447
10,93,779	4,28,146	...	...	2,169	272	15,25,758	39,632	15,65,390
10,27,912	3,86,695	...	...	6,953	1,083	14,24,400	3,314	14,27,714
9,57,066	6,85,974	...	...	2,379	347	16,47,450	30,125	16,77,575
9,92,489	5,36,334	...	...	4,666	717	15,33,925	17,020	15,50,945

OFFICIAL YEARS.	Opening Balance.	Manufactured.	Salt purchased from Importers.	Spontaneous Salt.	Received on transfer from district to district.	Gain by weightment.	Miscellaneous.	Total received.	IMPORTED ON PRIVATE ACCOUNT.		Grand Total.
									From British Ports.	From Foreign Ports.	
1	2	3	4	5	6	7	8	9	10	11	12
I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
1865-6	72,17,369	63,68,361	9,15,262	1,26,449	59,274	39,265	8,083	148,54,063	803	...	148,54,866
1866-7	84,63,758	75,72,100	8,98,492	2,52,694	...	57,993	700	151,55,799	...	...	151,55,799
1867-8	81,14,041	69,54,752	6,78,928	76,370	...	44,077	737	149,98,945	...	...	149,98,945
1868-9	78,37,463	61,58,255	8,51,702	26,161	...	21,694	937	139,26,144	...	240	139,26,384
1869-70	67,48,666	73,15,532	8,50,376	18,213	...	18,370	815	149,50,570	...	9,918	149,60,488
1870-1	77,86,249	46,76,187	7,86,925	11,753	...	9,259	299	132,70,774	797	12,637	132,84,208
1871-2	62,18,781	68,54,241	8,22,370	27,467	54,492	7,459	292	139,92,096	...	1,804	132,93,900
1872-3	66,66,332	51,20,798	9,54,428	3,378	...	5,663	788	127,31,359	...	22,862	127,54,191
1873-4	55,84,609	70,69,408	7,57,997	2,04,886	59,995	3,679	182	136,20,757	200	22,975	136,43,932
1874-5	64,32,687	50,52,626	7,69,474	40,321	1,46,099	9,715	665	124,81,838	418	21,447	125,03,723
First 5 yrs. average	72,96,268	64,83,826	8,26,950	99,976	11,855	33,930	2,253	147,71,102	161	2,032	147,73,297
Last 5 yrs. average	65,25,748	57,48,667	8,27,639	57,561	52,116	7,160	486	132,19,374	283	15,333	132,35,991
Ten yrs. average	69,11,006	61,21,243	8,27,294	78,768	31,984	23,570	1,370	139,95,235	222	9,182	140,04,644

OFFICIAL YEARS.	WASTAGE.				Exported beyond the Presidency.	Sold to French Government.	Supplied to Amindivi Islands.	Sent from district to district.	Miscellaneous.	Total expenditure on Government account.	Imported on private account.
	Retail.	Ordinary discount.	Special discount.	Total.							
25	26	27	28	29	30	31	32	33	34	35	
I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
1865-6	3,42,614	1,39,954	5,040	4,87,608	12,86,965	33,411	753	41,110	90	83,90,205	803
1866-7	1,65,333	1,60,974	6,942	3,33,249	5,04,739	55,964	239	4,800	240	70,41,718	...
1867-8	2,25,949	1,55,102	45,118	4,26,169	1,95,176	56,390	736	...	120	71,31,430	...
1868-9	2,16,673	1,59,211	20,790	3,96,674	2,19,972	34,935	759	...	20	71,77,478	240
1869-70	2,28,031	1,40,395	20,412	3,88,838	4,72,180	78,945	741	...	168	71,64,221	2,919
1870-1	1,90,555	1,47,227	19,540	3,57,322	3,55,520	56,290	538	...	8	70,51,993	13,434
1871-2	2,16,631	1,51,597	407	3,68,635	4,08,052	52,044	1,500	55,434	130	73,85,763	1,804
1872-3	2,78,181	1,55,212	1,562	4,34,955	3,06,558	63,170	589	...	59	71,46,780	22,832
1873-4	2,76,772	99,324	...	3,76,096	2,83,296	54,260	1,074	60,000	45	71,88,038	23,173
1874-5	2,23,218	1,16,150	5,502	3,44,865	4,71,985	55,636	919	3,21,167	104	77,82,260	21,886
First 5 yrs. average	2,35,724	1,53,127	19,660	4,08,511	5,25,805	52,935	647	2,182	130	73,81,095	2,198
Last 5 yrs. average	2,37,079	1,27,202	7,432	3,70,713	3,63,082	56,281	935	1,01,320	68	70,10,275	16,616
Ten yrs. average	2,36,357	1,40,514	12,551	3,89,443	4,50,443	54,608	791	35,251	99	73,46,005	9,404

* Including Indian Maunds 2,30,497 from Tinnevely to Malabar.

SALES.											
HOME CONSUMPTION.				INLAND CONSUMPTION.				TOTAL SALES.			
Retail.	Wholesale.		Total Home Consumption.	Retail.	Wholesale.		Total Inland Consumption.	Retail.	Wholesale.		Total.
	Ordinary.	Special.			Ordinary.	Special.			Ordinary.	Special.	
13	14	15	16	17	18	19	20	21	22	23	24
I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
28,28,948	4,42,542	22,652	33,03,538	10,01,524	22,16,578	13,728	32,31,830	38,40,437	26,59,121	35,760	65,35,269
22,42,339	7,89,576	21,721	30,53,633	8,19,940	22,68,900	...	30,88,840	30,62,295	30,58,476	21,721	61,42,493
22,84,230	9,60,039	45,510	32,89,879	9,29,178	21,76,896	36,336	31,53,016	32,29,458	31,36,955	82,476	64,42,889
22,87,348	10,44,720	26,274	33,58,342	11,25,466	19,80,319	60,971	31,66,740	34,12,804	30,25,033	87,245	65,25,082
24,68,983	7,98,770	52,878	33,20,611	10,23,246	18,68,751	10,710	29,02,708	34,92,210	25,67,521	63,588	62,23,319
23,48,797	8,91,668	38,396	32,79,859	10,96,781	19,05,614	...	30,62,395	31,45,578	27,97,289	39,396	62,82,254
24,53,431	8,65,361	...	33,18,792	11,66,173	20,15,001	...	31,81,177	35,19,604	28,80,365	...	64,99,969
24,46,502	8,98,044	19,330	33,63,876	15,26,541	11,81,035	...	30,07,576	33,73,043	23,79,079	19,330	63,71,452
24,99,983	7,96,172	...	32,06,162	21,16,179	10,90,975	...	32,07,154	45,26,162	18,57,154	...	64,13,317
26,31,743	8,00,206	...	34,91,943	16,18,937	14,06,664	...	30,25,621	43,16,700	22,06,864	...	65,17,564
24,24,579	8,07,133	33,689	32,65,201	9,81,876	21,02,286	24,469	31,08,625	34,05,249	29,09,419	58,158	63,73,826
24,70,092	8,50,292	11,745	33,32,129	15,04,924	15,79,859	...	30,84,783	39,75,916	24,30,151	11,745	64,16,912
24,47,237	8,28,718	22,717	32,98,667	12,43,356	18,41,073	12,234	30,96,703	35,99,634	26,69,786	34,952	63,95,970

REALIZATIONS.											
Grand Total.	Closing Balance in Government Stores.	Retail.	Wholesale.	Exported beyond the Presidency.	Sold to French Government.	Sold to Amindivi Islands.	Cost of carriage to Inland Depôts, recovered.	Miscellaneous.	Total.	Duty on Private Importations.	Grand Total.
36	37										
I. Mds.	I. Mds.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
83,91,108	64,63,758	58,15,741	40,85,497	1,93,045	5,133	527	5,041	6,383	101,11,373	1,255	101,12,628
70,41,718	81,14,081	51,68,397	51,93,485	75,710	8,264	167	8,287	9,874	104,64,124	...	104,64,124
71,31,480	78,37,465	54,43,765	54,28,949	29,262	6,647	492	9,220	6,178	109,24,513	...	109,24,513
71,77,718	67,48,666	57,59,144	52,51,969	29,646	4,833	321	7,623	3,221	110,56,667	370	110,57,237
71,74,140	77,86,349	64,65,680	50,63,746	63,662	9,594	389	4,594	15,271	116,30,842	17,947	116,48,789
70,65,427	62,18,781	63,90,133	56,75,129	47,825	7,802	285	3,949	5,483	126,30,697	24,360	126,54,967
73,87,563	66,06,332	72,31,874	57,36,501	51,857	6,855	675	2,880	4,833	130,65,479	3,273	130,68,752
71,69,532	55,84,609	79,46,037	47,89,614	42,575	7,792	307	1,406	4,953	127,92,734	41,330	128,34,064
72,11,233	64,32,667	90,52,326	37,74,310	42,530	6,816	561	1,495	8,042	128,85,883	42,031	129,27,914
78,04,126	46,99,588	86,85,928	41,24,766	*87,654	6,956	483	2,167	31,632	132,38,968	39,632	132,78,600
73,83,228	73,90,062	57,30,547	50,05,930	78,666	6,884	389	6,953	8,133	108,37,513	3,914	108,41,457
73,27,331	59,08,399	79,61,263	48,86,064	54,488	7,211	463	2,379	10,862	129,22,739	30,125	129,52,869
73,53,410	65,49,230	68,45,905	49,45,937	66,577	7,047	421	4,660	9,524	118,60,133	17,020	118,97,159

* Includes Rupees 24,971 received for salt exported to Malabar.

APPENDIX B.—PART II.

The following Statement shows the average transactions at each salt division during the ten years ending Fasli 1284 (1874-5), and for the two quinquennial periods which make up that series of years. The form of the monthly account current does not exhibit the wastage at each division, and hence it has not been possible to prepare the Statement for official years. The wastage at each division for the Fasli years has been obtained from the Collectors' annual returns; and is that which actually accrued in each year, and not that written off under sanction. The fact that some divisions have been in existence only for a portion of the series of years, as noted at foot of the Statement, must be borne in mind in considering the averages entered opposite to them. The wholesale sales are in all cases entered gross; i. e., the discount allowed is included, as in the accounts current up to Fasli 1283, under sales. The figures in the accounts current for Fasli 1283-4, since the change in the mode of showing the discount, have been altered before striking the averages to make the Statement uniform in principle throughout.

APPENDIX B.] Statement showing average transactions at each division from Fasli 1275 (1865-6) to Fasli 1284 (1874-5) inclusive.

XXI

Districts.	Divisions.	Balance in Store.	Received from Manufacturers.	Received from other Districts or Divisions.	Gain by Measure-ment and Miscellaneous.	Total Stock and Receipts.	Sales for Home and Inland consumption.	Exported by Sea.	Supplied to French Govern-ment.	Miscella-neous.	Wastage.	Balance in Store.	Total.
		I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds. Retail. I. Mds. Wholesale.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
GANJAM.	Ganjam { First 5 years Last 5 years Ten years	99,569 2,49,779 1,77,569	1,68,295 2,20,553 1,91,424	...	216 63 140	2,68,080 4,70,986 3,69,233	1,31,400 1,55,997 1,43,698	21,600 22,560 22,980	...	3 15 9	4,291 8,691 6,491	1,10,786 2,89,123 1,96,955	2,68,080 4,70,986 3,69,233
	Ichapur { First 5 years Last 5 years Ten years	1,09,700 1,90,759 1,50,250	1,89,487 1,41,060 1,65,273	...	327 95 211	2,99,474 3,31,914 3,15,744	1,23,331 1,10,012 1,16,672	30,960 13,920 22,440	...	11 11 11	4,685 3,351 4,018	1,10,557 2,04,620 1,75,603	2,99,474 3,31,914 3,15,744
	Nowrada { First 5 years Last 5 years Ten years	6,68,603 5,76,690 6,22,647	4,17,268 1,93,767 2,05,517	...	2,813 249 1,531	10,88,684 7,70,706 9,29,695	1,65,483 1,94,953 1,80,237	1,07,321 71,040 1,34,280	...	33 ...	6,959 13,211 10,055	7,18,785 4,91,466 6,05,126	10,88,684 7,70,706 9,29,695
	Womcravilli { First 5 years Last 5 years Ten years	93,255 1,11,283 1,02,254	2,09,162 1,85,013 2,09,091	...	1,074 35 555	3,24,498 2,99,401 3,11,900	76,302 1,42,893 1,69,337	1,10,160 60,960 85,560	...	4 2 3	1,669 90,047 3,534	1,36,363 90,047 1,13,906	3,24,498 2,99,401 3,11,900
VIZAGAPATNAM.	Kuppi { First 5 years Last 5 years Ten years	25,672 27,873 26,473	39,521 50,616 45,069	...	146 121 133	64,339 78,112 71,573	50,373 45,640 37,946	720 ...	...	...	612 1,604 1,108	54,594 30,888 32,211	65,299 78,112 71,676
	Konaka* { First 5 years Last 5 years Ten years	22,961 11,480	32,174 16,582	...	73 ...	1,061 55,135	1,061 28,763	720 360	...	...	...	21,339 12,169	1,061 55,135
	Bimlipatam { First 5 years Last 5 years Ten years	27,624 37,308 32,466	45,063 57,496 51,979	...	112 222 167	72,795 92,026 89,912	56,601 63,550 50,695	730 360	...	...	603 2,055 1,329	32,335 28,721 32,128	72,795 92,026 89,912
	Karasa { First 5 years Last 5 years Ten years	79,672 1,08,179 93,925	63,322 22,302 43,112	...	503 74 289	1,43,497 1,31,155 1,37,326	45,879 32,887 39,353	240 ...	...	...	942 5,004 2,973	96,436 98,264 94,350	1,43,497 1,31,155 1,37,326
	Bilacheruvu { First 5 years Last 5 years Ten years	1,01,799 91,440 96,620	63,063 33,077 48,070	...	274 54 164	1,65,136 1,29,571 1,44,854	58,115 39,757 48,936	11,761 ...	...	...	4,256 5,566 4,911	91,004 79,248 85,126	1,65,136 1,29,571 1,44,854
	Pentakottai { First 5 years Last 5 years Ten years	...	979 4,773 2,876	...	...	...	19 5,010 2,514	...	...	...	...	950 7,379 4,170	979 12,763 6,872

* Open Fasli 1275 and Faslies 1282-1284 only.
† Open Faslies 1278-1284 only.

District	Divisions	Balance in Store.	Received from Muzdars.	Reserved from other Districts or Divisions.	Gain by Measure-ment and Receipts.	Total Stock and Receipts.	Sales for Home and Inland consumption.		Exported by Sea.	Supplied to French Govern-ment.	Miscellane-ous.	Wastage.	Balance in Store.	Total.
							Retail.	Wholesale.						
GODAVERY	Penukonda	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	2,79,587	5,86,126	5,86,126	5,86,126	2,79,587	2,79,587	18,563	538	20,556	2,79,587	2,79,587	
		Last 5 years	2,71,501	5,71,501	5,71,501	5,71,501	2,71,501	2,71,501	12,631	720	10,162	2,71,501	2,71,501	
	Ten years	2,67,489	2,73,511	379	849,511	2,57,874	9,069	16,955	18,999	2,56,476	5,39,511	5,39,511		
	Mogilur	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	19,872	19,872	19,872	19,872	12,039	6,919	...	...	...	389	7,551	10,970
		Last 5 years	47	9,955	2	9,955	6,919	...	...	...	130	6,772	6,772	6,772
	Ten years	47	9,955	2	9,955	6,919	...	...	...	...	...	...	...	...
Pandra	Pandra	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	1,77,652	4,76,009	4,76,009	4,76,009	29,429	31,198	1,35,930	...	...	1,377	3,10,574	4,76,009
		Last 5 years	1,67,914	1,68,359	1,68,359	1,68,359	31,198	31,198	82,323	...	...	2,018	1,68,359	1,68,359
	Ten years	1,99,435	1,99,435	...	3,99,435	31,283	93,576	...	...	...	2,918	1,93,452	3,93,430	
Maranapudi	Maranapudi	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	1,77,474	4,79,718	4,79,718	4,79,718	96,830	71,714	46,008	...	...	4,928	3,09,952	4,79,718
		Last 5 years	2,32,375	5,49,333	5,49,333	5,49,333	71,714	1,59,120	1,59,120	...	...	4,918	3,05,405	5,49,333
	Ten years	2,49,523	5,09,993	87	6,11,485	85,801	1,02,064	...	...	...	4,129	3,12,151	5,11,485	
Vinnapudi	Vinnapudi	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	2,35,275	2,76,059	2,76,059	2,76,059	70,907	14,400	1,44,000	...	...	5,349	1,89,343	2,76,059
		Last 5 years	1,54,135	1,54,135	1,54,135	1,54,135	14,401	1,02,353	1,02,353	...	...	1,669	1,44,162	1,54,135
	Ten years	1,60,517	1,15,109	9,449	2,89,657	68,729	85,353	...	...	...	5,977	1,57,789	2,89,657	
Chinna Gajjam	Chinna Gajjam	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	1,73,733	4,89,407	4,89,407	4,89,407	1,49,557	79,806	79,806	...	...	10,645	3,75,303	4,89,407
		Last 5 years	2,73,090	4,87,109	4,87,109	4,87,109	1,97,417	94,175	94,175	...	...	8,941	4,72,752	4,87,109
	Ten years	3,46,823	5,65,540	88	6,32,258	1,25,052	77,668	...	...	13,191	9,799	4,54,028	5,46,258	
Kinnapudi	Kinnapudi	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	1,45,302	3,36,916	3,36,916	3,36,916	45,986	40,363	1,05,920	...	...	1,001	1,83,096	3,36,916
		Last 5 years	1,54,135	3,40,518	3,40,518	3,40,518	40,363	1,13,967	1,13,967	...	...	1,106	1,45,002	3,40,518
	Ten years	1,63,891	3,18,777	991	3,18,777	44,610	1,08,499	...	...	...	1,109	1,54,319	3,48,717	
Puduru	Puduru	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	1,57,070	4,01,386	4,01,386	4,01,386	59,109	59,384	59,384	...	...	9,171	2,95,351	4,01,386
		Last 5 years	1,50,260	4,08,219	4,08,219	4,08,219	80,237	80,937	80,937	...	...	2,277	2,74,025	4,08,219
	Ten years	2,56,864	4,51,357	549	4,51,357	86,693	77,132	...	...	...	9,224	2,87,293	4,51,357	
Pitla	Pitla	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	99,259	2,39,331	2,39,331	2,39,331	8,640	10,324	10,324	...	...	2,184	1,51,458	2,39,331
		Last 5 years	1,18,266	2,59,414	2,59,414	2,59,414	25,372	6,033	6,033	...	...	4,637	1,83,095	2,59,414
	Ten years	1,64,799	2,74,365	777	2,74,365	38,451	8,160	...	...	...	3,116	1,77,453	2,74,365	
Tummalapudi	Tummalapudi	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.	1. Mds.
		First 5 years	15,313	34,350	34,350	34,350	11,563	1,050	1,050	...	...	409	17,109	34,350
		Last 5 years	15,741	36,474	36,474	36,474	15,741	1,480	1,480	...	...	373	16,991	36,474
	Ten years	15,741	36,474	36,474	36,474	30,281	15,101	1,680	...	...	782	19,709	36,474	

Districts	Divisions	Balance in Store	Received from Muzdars	Received from other Divisions	Gain by Measure-ment and Receipts	Total Stock and Receipts	Sales for Home and Inland consumption		Exported by Sea	Supplied to French Govern-ment	Miscellaneous	Wastage	Balance in Store	Total
							Retail	Wholesale						
NEL	Lankapalli	First 5 years	2,4,208	29,010	29,010	2,4,208	2,409	...	11,097	29,010	29,010	...	21,423	2,68,125
		Last 5 years	1,0,004	1,0,004	1,0,004	1,000	...	5,512	1,0,004	1,0,004	1,0,004	...	1,373	71,297
		Ten years	1,0,004	1,0,004	1,0,004	1,000	...	1,0,004	1,0,004	1,0,004	1,0,004	...	12,509	1,00,711
NEL	Gogulavalli	First 5 years	76,078	30,520	30,520	76,078	2,409	...	735	30,520	30,520	...	1,151	89,896
		Last 5 years	45,555	2,351	2,351	240	...	925	45,555	45,555	45,555	...	492	39,144
		Ten years	60,837	23,351	23,351	240	...	925	60,837	60,837	60,837	...	1,448	1,29,036
NEL	Krishnapatnam	First 5 years	1,34,066	35,392	35,392	1,34,066	...	...	...	...	...	...	3,096	1,39,219
		Last 5 years	1,16,522	1,04,030	1,04,030	...	...	...	...	...	...	...	8,724	1,13,143
		Ten years	1,16,522	1,04,030	1,04,030	...	...	...	...	...	...	...	11,448	1,10,079
NEL	Dugulapattam	First 5 years	25,257	17,543	17,543	25,257	...	...	...	...	...	...	590	24,269
		Last 5 years	21,052	20,945	20,945	21,052	...	...	...	...	...	...	452	20,885
		Ten years	24,663	19,215	19,215	21,197	...	...	...	...	...	...	615	22,577
NEL	Tala	First 5 years	60,025	48,720	48,720	60,025	...	...	...	...	...	...	881	78,967
		Last 5 years	76,823	77,823	77,823	72,065	...	...	...	...	...	...	2,049	80,645
		Ten years	83,474	65,276	65,276	68,211	...	...	...	...	...	...	1,463	79,806
NEL	Sunnapugunda	First 5 years	30,659	13,991	13,991	30,659	...	...	...	...	...	...	1,011	20,863
		Last 5 years	12,095	17,705	17,705	13,399	...	...	...	...	...	...	493	11,918
		Ten years	16,383	14,848	14,848	14,115	...	...	...	...	...	...	752	16,407
NEL	Ramaswaram	First 5 years	2,758	1,143	1,143	2,758	...	...	...	...	...	...	75	...
		Last 5 years	1,291	571	571	1,980	...	...	...	...	...	...	32	...
		Ten years	1,291	571	571	1,980	...	...	...	...	...	...	82	...
NEL	Gangastream	First 5 years	3,417	5,151	5,151	3,417	...	...	...	...	...	...	46	...
		Last 5 years	4,203	2,530	2,530	3,209	...	...	...	...	...	...	24	...
		Ten years	4,203	2,530	2,530	3,209	...	...	...	...	...	...	34	...
CHINGLEPUT	Madur	First 5 years	14,94,568	14,71,513	14,71,513	14,94,568	1,35,988	...	6,340	14,71,513	14,71,513	...	12,145	14,94,568
		Last 5 years	14,36,993	1,52,466	1,52,466	1,31,966	...	...	...	...	...	...	32,164	14,36,993
		Ten years	14,36,993	1,52,466	1,52,466	1,31,966	...	...	...	...	...	...	32,164	14,36,993
CHINGLEPUT	Hama's Gardens	First 5 years	2,16,127	71,24	71,24	2,16,127	...	...	...	...	...	...	3,873	2,16,127
		Last 5 years	86,733	21,650	21,650	86,733	...	...	...	...	...	...	1,075	86,733
		Ten years	1,51,433	61,692	61,692	86,733	...	...	...	...	...	...	2,474	1,51,433
CHINGLEPUT	Corucong	First 5 years	1,21,504	1,49,169	1,49,169	1,21,504	...	...	...	...	...	...	7,096	1,21,504
		Last 5 years	78,611	2,30,189	2,30,189	4,697	...	...	...	...	...	...	4,697	78,611
		Ten years	1,40,295	1,94,179	1,94,179	5,494	...	...	...	...	...	...	5,876	1,40,295
CHINGLEPUT	Choyur	First 5 years	1,19,656	51,533	51,533	1,19,656	...	...	...	...	...	...	4,793	1,19,656
		Last 5 years	88,338	99,788	99,788	52,209	...	...	...	...	...	...	3,184	88,338
		Ten years	1,04,012	75,661	75,661	56,192	...	...	...	...	...	...	3,959	1,04,012

* Open Fash 1275-1278 only.

* Open Fash 1275 only.

* Open Fash 1282-1284 only.

Districts	Divisions	Balance in Store.	Received from Manufacturers.	Received from other Districts or Miscellaneous.	Gain by Manufacture and Miscellaneous.	Total Stock and Receipts.	Sales for Home and Foreign consumption.		By Govt.	Supplied to Government.	Miscellaneous.	Wastage.	Balance to Store.	Total.
							Retail.	Wholesale.						
TAMIL NADU	Madrass	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
		First 5 years	2,67,969	...	697	7,31,238	2,50,578	...	15,900	41,204	7,280	36,283	3,73,910	7,31,238
		Last 5 years	2,90,633	...	122	4,51,876	1,94,052	...	9,450	36,980	...	14,087	2,97,447	4,51,876
		Ten years	3,43,100	...	400	5,93,035	2,22,835	...	...	32,771	2,600	25,186	2,90,633	5,93,035
	Madurai	I. Mds.	67,605	7,200	50	1,11,354	57,445	...	509	5,974	...	2,254	53,957	1,11,354
		Last 5 years	73,853	41,197	72	1,75,519	83,725	...	...	...	...	5,784	78,111	1,75,519
		Ten years	66,222	25,667	55	1,43,466	59,124	912	360	3,637	...	4,019	68,034	1,43,466
	Tirunelveli	I. Mds.	93,761	...	18	94,004	37,155	...	1,251	...	...	2,229	14,190	94,004
		Last 5 years	7,316	...	4	26,033	16,759	...	...	...	...	620	9,065	27,032
		Ten years	11,365	...	11	40,563	26,427	...	780	...	...	1,439	11,926	40,563
	Tiruvannamalai	I. Mds.	15,672	...	89	27,781	21,601	...	...	...	...	1,261	4,599	27,781
		Last 5 years	...	...	...	...	...	...	...	...	...	631	2,999	...
		Ten years	7,236	...	42	13,551	10,551	...	...	...	...	...	...	13,551
TAMIL NADU	Nellore	I. Mds.	86,376	...	45	1,49,879	96,957	55,900	...	...	...	439	72,332	1,49,879
		Last 5 years	31,711	...	22	1,19,502	51,913	51,909	...	...	...	639	32,090	1,19,502
		Ten years	47,118	...	55	1,90,791	68,525	56,410	...	...	...	503	52,211	1,90,791
	Tiruppur	I. Mds.	60,185	...	135	68,809	10,549	25,560	...	19,900	...	291	37,839	68,809
		Last 5 years	55,079	...	41	93,776	17,648	29,189	...	10,560	...	1,406	44,290	93,776
		Ten years	57,606	...	93	91,372	14,189	21,489	...	11,169	...	844	40,809	91,372
	Nagapattinam	I. Mds.	1,53,741	47,321	276	2,50,488	31,743	1,52,640	13,602	...	...	2,867	83,311	2,50,488
		Last 5 years	1,11,246	24,496	299	4,11,176	8,713	9,95,960	94,588	...	...	2,678	73,797	4,11,176
		Ten years	76,632	41,189	248	3,59,839	20,222	2,20,800	19,140	450	...	2,732	81,519	3,59,839
	Vudalur	I. Mds.	1,51,653	...	7,001	4,92,311	4,679	32,080	31,728	...	47,924	639	3,76,393	4,92,311
		Last 5 years	48,775	...	1,603	2,16,232	12,343	3,366	6,910	...	31,436	9,456	1,46,806	2,16,232
		Ten years	1,01,717	...	4,553	3,50,817	11,451	15,720	30,469	...	41,180	5,092	2,91,395	3,50,817
	Pambanallur	I. Mds.	90,569	...	2	1,36,971	8,185	1,69,656	...	...	...	381	27,959	1,36,971
		Last 5 years	76,531	...	14	81,070	18,255	50,316	...	...	...	293	12,216	81,070
		Ten years	97,499	...	8	1,13,971	13,212	39,298	...	...	...	281	21,577	1,13,971
	Adirampattinam	I. Mds.	1,38,372	...	3	1,50,608	6,513	1,29,129	...	...	...	150	15,359	1,50,608
		Last 5 years	11,825	...	50	33,315	32,201	39,269	...	...	...	176	10,943	33,315
		Ten years	11,876	...	54	33,976	13,222	31,230	...	...	...	163	13,131	33,976
	Kattankulathur	I. Mds.	59,627	...	176	1,16,264	45,416	28,069	9,323	...	...	1,667	55,467	1,16,264
		Last 5 years	50,258	...	401	90,543	45,416	21,660	730	...	...	1,353	27,693	90,543
		Ten years	59,443	...	288	1,03,452	46,394	27,750	4,974	...	...	1,910	41,533	1,03,452

Districts	Divisions	Balance in Store.	Received from Manufacturers.	Received from other Districts or Miscellaneous.	Gain by Manufacture and Miscellaneous.	Total Stock and Receipts.	Sales for Home and Foreign consumption.		By Govt.	Supplied to Government.	Miscellaneous.	Wastage.	Balance to Store.	Total.
							Retail.	Wholesale.						
TAMIL NADU	Arasikudi	I. Mds.	43,362	47,218	51	90,571	8,731	29,280	...	...	...	199	51,973	90,571
		Last 5 years	37,294	42,816	1	80,211	21,118	21,369	...	...	...	666	47,067	80,211
		Ten years	40,882	45,017	42	85,941	15,437	25,326	...	...	...	492	47,172	85,941
	Vallam	I. Mds.	45,312	59,799	446	1,05,559	42,191	18,560	...	...	...	687	97,340	1,05,559
		Last 5 years	19,794	57,119	2	67,915	53,124	2,840	...	...	...	637	10,914	67,915
		Ten years	27,693	57,916	324	85,281	50,628	10,239	...	...	...	662	23,377	85,281
	Valluvandipattinam	I. Mds.	66,381	57,569	692	1,24,323	27,240	...	...	...	1,325	1,200	65,938	1,24,323
		Last 5 years	46,500	46,500	55	74,057	53,476	...	...	...	1,200	1,200	71,057	74,057
		Ten years	46,792	52,086	338	99,180	55,403	...	...	...	1,612	42,243	99,180	99,180
	Attankur	I. Mds.	1,19,161	28,292	195	1,26,552	14,922	25,456	...	...	...	1,459	94,785	1,26,552
		Last 5 years	46,609	35,550	1	82,160	53,542	...	...	...	2,806	46,815	82,863	82,863
		Ten years	72,537	29,822	95	1,02,457	24,592	12,745	...	...	1,952	70,800	1,02,457	1,02,457
	Morekalam	I. Mds.	1,23,307	52,717	507	1,76,531	44,697	5,320	...	...	...	2,465	1,23,827	1,76,531
		Last 5 years	41,328	67,827	1	1,09,156	59,091	...	...	...	2,886	48,069	1,09,356	1,09,356
		Ten years	82,418	60,272	298	1,42,688	51,903	9,760	...	...	3,376	85,919	1,42,688	1,42,688
	Mutturuglam	I. Mds.	1,03,214	1,98,398	1,244	2,10,156	52,011	27,120	...	...	...	732	1,00,240	2,10,156
		Last 5 years	1,26,741	1,06,577	305	2,33,623	85,873	...	...	...	4,365	1,45,779	2,33,023	2,33,623
		Ten years	1,14,927	1,07,637	775	2,23,589	83,901	19,560	...	...	2,558	1,23,010	2,23,089	2,23,089
	Pamban	I. Mds.	380	380	...	760	375	...	...	...	...	5	380	760
		Last 5 years	140	314	...	454	314	...	...	...	...	...	140	454
		Ten years	260	347	...	607	345	...	...	...	...	2	260	607
	Mudikudi	I. Mds.	17,458	19,435	55	36,948	22,808	...	750	...	...	692	19,738	36,948
		Last 5 years	8,729	9,713	27	18,474	11,404	...	360	...	...	...	6,364	18,474
		Ten years	...	...	...	...	...	...	...	...	...	...	...	...
	Sholayakudi	I. Mds.	15,026	16,057	183	31,266	20,876	...	...	...	...	461	9,266	31,266
		Last 5 years	...	...	...	...	...	...	...	...	...	...	...	...
		Ten years	7,513	8,014	91	15,616	10,429	...	...	...	...	231	4,978	15,616
TAMIL NADU	Vaijapur	I. Mds.	1,46,047	50,676	2,214	1,98,937	51,510	480	38,412	...	...	692	1,27,837	1,98,937
		Last 5 years	1,92,541	29,192	122	2,21,855	36,672	1,680	31,101	...	...	2,574	1,21,662	2,21,855
		Ten years	1,39,285	65,294	1,163	2,05,742	44,697	1,050	34,738	...	...	1,633	1,24,699	2,05,742
	Arasikudi	I. Mds.	1,21,430	95,324	1,363	2,18,117	88,261	25,440	...	...	...	1,874	1,02,565	2,18,117
		Last 5 years	72,144	1,46,453	342	2,18,939	1,13,451	4,090	...	...	...	2,707	97,477	2,18,939
		Ten years	96,797	1,20,889	852	2,18,538	1,00,539	14,760	...	...	...	2,290	1,00,020	2,18,538
	Pattinam	I. Mds.	2,01,576	66,155	1,122	2,68,863	13,827	22,360	46,704	...	...	2,127	2,03,835	2,68,863
		Last 5 years	1,11,402	1,10,294	176	2,21,872	18,777	35,861	67,631	...	...	8,491	88,972	2,21,872
		Ten years	1,56,489	88,225	649	2,45,363	16,802	20,271	57,178	...	...	5,809	1,46,403	2,45,363
		Ten years	...	...	...	...	...	...	...	...	...	...	...	...

* Open Fash 1275-1277 only.

† Includes manufactured salt produced at Vedaranyam from Fash 127.

‡ Open Fashes 1275-1277 only.

§ From Fash 1277, spontaneous salt only.

APPENDIX C.

No. 1.

Précis of replies of Commissioner of Northern Circars and of Collectors to Question 2 of the Circular of the Board of Revenue, dated 6th April 1854, as to the position and rights of manufacturers.

*The Commissioner of the Northern Circars states that "mirasi rights are scarcely known in the N. Circars. In general the manufacturers possess a prescriptive right of occupancy in their pans similar to that on which the lands assessed to revenue are held. The pans form a valuable and saleable property in some places. The extent of manufacture is limited by the demand of the Government * * *. If more salt is made than is sanctioned upon the estimate of the season, the manufacturers are paid at a reduced rate for the excess destroyed."*

The Collector of Vizagapatnam writes:—
"castes;" (Oriyas can have Pariahs and other low castes in the work. The manufacturers field; the pans are heritable and ditto. Smuggling involves a fine if done by the manufacturers, Government, however, always provides that the manufacturers belong to the following be called a "caste") Peddikaj, Oriyas, Soodras, Pectriyas, Telugus and Mahomedans do not engage in the same right to their pans that a ryot has to his field. The makers agree each year to manufacture the quantity of pans. In most pans storing, heaping and thatching is done by the manufacturers, not in Ganjam (i.e. the Ganjam division seemingly). Law.

The reply of the Principal Assistant Collector at Chicacole is almost exactly to the same effect. The manufacturers are the ryots of adjacent villages and in consideration of their employment at the salt pans have no peculiar rights or privileges." The right is heritable as a "jeroyetty pattali" (ziryatyati pattali). When one lapses to Government there is keen competition, the manufacture falling at a time of year when there is not much field work going on.

The Collector of Vizagapatnam writes:—
*"The manufacturers are generally ryots who cultivate land in the neighbourhood, some also at times when their labour is not required in the fields working as coolies, as best they can get employment. These persons have no hereditary rights in the pans, such as those possessed by many of the manufacturers of salt in the south, though it is usual for the same ryots to cultivate the same pans from year to year. The channels for conveying the water to the salt pans are kept in repair at the expense of Government * * *. The quantity of salt to be manufactured in a year is determined according to the quantity in store and the estimated demand."*

The Collector of Rajahmundry writes:—
"The manufacture is carried on by a class of men who have inherited the right from their fathers. Some of these men are engaged in cultivation, and some in various other occupations besides the manufacture of salt. Others again have no second occupation and live entirely by the manufacture. It is not known how the rights and privileges of the manufacturers first arose, but they now hold the pans as 'manyam' and transfer their holdings, which are of various sizes, at pleasure. The ryots cannot make salt without the Collector's permission, and then only to a certain fixed amount. Before the commencement of the season, the quantity to be made is fixed with reference to the expected sales and the quantity to be kept on hand. The contract is divided among the different villages, with reference to the extent of the pans, and the amount allotted to each village is again divided among the different ryots, according to the size and capacity of their respective holdings." Storing and thatching are at the expense of Government.

The Collector of Masulipatam states that till his time the salt had always been made by coolies working directly under the Superintendent, at 2 annas per diem. He however had introduced a system of contract in one division. Presumably the contractors acquired no transferable right in the pans; but the Collector is not explicit on the point. Inuguduru, the station to which he referred, has since been closed.

* The Principal Assistant values this labour at 12 Annas per heap and the straw at from Rs. 2-8-0 to Rs. 3-8-0.

The Collector of Guntoor writes:—

"The pans are looked on as private property, are mortgaged, bought and sold, and inherited. The condition under which they are held is well understood. The Collector determines the quantity of salt to be made each season and at what store it shall be made and the quantity is apportioned among the holders of the pans. * * No claim to manufacture salt annually is considered to exist, nor is any right supposed to be invaded or any compensation looked for, when, (as has sometimes been found necessary in concentrating the operations of the manufacturers and so placing the depôts under better control), the pans in a particular locality are no longer used. The pans are held by persons of all classes; some carry on the manufacture on their own account, others sublet their pans, as it were, giving the party who undertakes the manufacture, many of whom (sic) are also engaged in the cultivation of land, from Rs. 4½ to Rs. 5½ or 6 per garce, taking themselves the difference between that amount and the then kudivaram of Rs. 7 per garce. The ryots store, but Government pays for the thatching.

The Collector of Nellore writes:—

"The manufacturing class are generally Sudras and Pariahs, although pans are held by persons of any class without distinction. Lands are obtained from the Circar, which are converted into pans at the labour and expense of the manufacturers, who have a right of property in them and can dispose of them. The amount of salt required is at first settled and the quantity to be produced in each cotnam, after which the portion to be supplied by the different pan-holders is fixed." Storing and thatching at the expense of the manufacturers.

The Collector of Chingleput writes:—

"The manufacturers belong to all castes of Hindus and Muhammadans and consist (1) of the mirasidars of the villages in the limits of which pans are situated, (2) of 'poyakaries,' who may have been introduced by Government in consequence of the inability of the mirasidars to cultivate the required extent of pans, and (3) of parties who may have obtained the pans by purchase, &c. They hold the lands as another description of private property, possessing the right of selling and transferring them to others at their pleasure. Sec. 5, Reg. I, 1805, also provides for compensation being made to the manufacturers, on the suppression of the manufacture at any particular locality under the orders of Government. The extent however to which the manufacture is annually carried on is determined by this office with reference to the anticipated demand, and, when the salt in store at any station is sufficient to meet the demands, the manufacture at such locality is postponed to the ensuing year. The quantity ordered for each place is apportioned to the pans under cultivation thereof and the proprietors thereof severally enter into engagements for raising the required quantity and no more."

The Collector of South Arcot writes:—

"The proprietors of the pans are called mirasidars, from their holding their pans as private property which they can sell, give away or otherwise dispose of. The proprietors consist of all castes and employ their labourers in the pans when they do not choose to labour in them themselves." The Markanam manufacturers furnished grass and thatched the heaps, getting Rupee 1 a garce extra for that.

The Collector of Tanjore writes:—

"The manufacturers of salt comprise all classes. Some are wealthy and independent of their salt pans; some are poor and work as agricultural labourers, when the manufacture of salt is over. * * * At the commencement of each year a certain quantity of salt is fixed as the dittam of each set of pans in every division, according to its probable requirements with reference to the average of past sales and the quantity remaining on hand. The dittam is rateably distributed among the owners of the pans. * * * The only privilege the owners of salt pans enjoy is the exclusive right of making salt, a right which is protected by Clause I, Sec. 8* Regulation I, 1805. By Section 6 of the same Regulation the miras right to pans is forfeited on the owner refusing to manufacture salt when called upon." It appears that in Tanjore the manufacturer bore the expense of storing and covering the heaps with mud.

The Collector of Madura writes:—

"The manufacturers are agriculturists of the villages in which the pans are situated or purchasers from them. They have no rights and privileges beyond the right to the kudivaram and of selling the beds if they please. The quantity of salt to be manufactured at the pans subject to each alam (salt depôt) is fixed by the Collector at the commencement of each year and the quantity produced is generally somewhat more * * * Neither is any engagement taken from each owner of pans as to the quantity of salt to be supplied by him."

* Probably Section 6 is meant.

The Collector of Tinnevely writes:—

"The manufacturers of salt are in general Alavars, Pullars and Pariahs, and till of late years no other castes were interested in that business; but lately Nails, Vellalabs, Chetties, Reddies and even Brahmans have obtained possession of salt-beds by purchase, mortgage and other means, employing the lower castes as their tenants and labourers. The beds being the private property of the salt ryots, they have the right of selling, mortgaging, or letting the beds according to their pleasure, and the price paid for the salt being known gives a permanent value to the beds increasing as the estimate increases, (or decreasing should it decrease), till the full limit of the produce of the pan is reached, no other parties having the right to make fresh beds of manufacture salt, while sufficient can be made in the existing beds." The Tinnevely salt beds were bound to make not only the beds, but wells, platforms, embankments and hedges, and to heap and measure the salt both at storeage and at sale.

The Collector of Madras writes:—

"The manufacturers are for the most part the mirasidars and ryots of the villages where the pans are situated. Most of them are a Telugu tribe of Reddies, who carry on all the process of manufacture by their personal labour. These men are said to have been originally invited seventy years ago to settle here from Chinna Gunjam in Guntoor and they have instructed all the rest. Most of the lower castes, as Pariahs, Pallis, Vullyans, &c., work as labourers; others are Brahmans or Vellalurs, resident in Madras, who employ hired labourers to work the pans. The terms on which they work may be seen by the agreement taken from them. The privileges of the mirasidars seem to be to have the refusal of new pans when they are opened. The other holders have no peculiar privileges beyond the power to transfer their right in their pans by sale, mortgage or bequest."

The agreement referred to is in 10 clauses:—

Clause 1. The manufacture being estimated at so many garce, we agree to deliver salt of the same quality and colour as the muster salt;—

Clause 2. Inferior salt may be destroyed and is to be replaced by an equal quantity of good salt; to be scraped wet and with sufficient water in the 'condam';—

Clause 3. We agree to the rates and also to the times of opening and closing manufacture;—

Clause 4. Will watch the salt and 'import it diligently' and be generally obedient and useful;—

Clause 5. Failure to 'furnish full share of the dittam' shall be punishable by levying Rs. 5 per garce, (i.e., of the deficiency), out of the kudivaram due, unless deficiency be general and due to bad weather;—

Clause 6. Smuggling, theft or treachery shall be punishable as in clause 5*; or in case of a second offence, by depriving offender of his pans;—

Clause 7. Labourers under ad, see not to be decoyed away;—

Clause 8. Raised platforms to be built by ryots;—

Clause 9. Ryots to bear cost of making or repair of channels, &c.;—

Clause 10. Private transfer of pans to be registered after close of manufacture;

* It is not quite clear how the penalty was estimated in this case.

APPENDIX C. No. II.—Statement showing area of each salt-work, number of sets of pans, number of registered owners and average out-turn of salt per owner.

Districts.	Divisions.	Area occupied by salt works.	Number of sets of pans.	Number of individuals registered as holding pans.	Average annual out-turn of salt in the 10 years ending Fasli 1874-75.	Average number of maunds made by each registered holder.	REMARKS.
					Rupess.		
Ganjam	Ganjam	353-20	180	180	1,94,424	1,086	
	Ichaspore	574-03	109	109	1,65,273	1,516	
	Nowpada	1,090-00	242	241	3,65,517	1,268	
	Womeravilli	310-42	353	431	2,09,991	465	
	Total	2,367-62	884	961	8,74,305	909	
Vizagapatam	Kuppili	163-00	235-5	73	45,059	617	* Open only 4 years.
	Konada*	80-46	117	56	16,582	296	
	Bimlipatam	199-48	47	40	51,279	1,282	
	Karasa	259-93	56	35	43,112	1,231	
	Balacherruvu	1,349-00	235	90	43,070	534	
	Pentakottai†	172-71	9	9	2,876	319	† Open 7 years only.
	Total	2,224-58	698-5	303	2,06,988	683	
Godavery	Penugudur	600-00	229	391	2,75,644	705	
	Mogaltur‡	400-00	146	366	9,936	27	‡ Open 3 years only; in last year only 513 maunds stored.
	Total	1,000-00	375	757	2,85,580	377	
Kistna	Manginapudi	497-41	207	97	2,02,925	2,091	
	Nizampatam	330-00	261	220	1,15,169	524	
	Chinna Ganjam	573-00	413	264	2,02,240	766	
	Total	1,400-41	881	581	5,20,334	896	
Nellore	Kanuparti	248-88	270-5	181	1,54,135	851	
	Padarti	776-44	439-3	227	1,80,950	797	
	Pakala	197-63	399-4	312	1,08,883	513	
	Tammalapenta	107-93	127-5	89	15,741	177	
	Iskapalli	227-18	289-6	185	14,504	76	
	Gogulapalli	184-08	83-5	112	29,931	214	
	Krishnapatam	223-18	170-1	175	73,461	420	
	Dugarazpatam	50-00	64-0	55	19,245	250	
	Tada	120-27	111-2	110	63,276	575	
	Sennapugunta	87-63	86-9	60	14,848	185	
	Total	2,223-22	2,042	1,426	6,68,994	469	
Chingleput	Kattur	419-43	624	179	13,11,990	941	
	Voyalur	1,115-00	1,235	426			
	Pulidivak	847-33	858	193			
	Attipat	1,054-53	1,201	278			
	Vallur	1,275-33	1,482	318			
	Vadaseranjaneri	241-06	114	135	81,592	600	
	Covelong	834-76	402	275	1,94,179	766	
	Cheyur	522-63	117	80	75,631	946	
	Total	6,361-53	6,033	1,885	16,63,422	882	
South Arcot	Merkanam	1,269-27	265	120	2,49,546	2,080	
	Gundalam	123-83	200	162	61,482	380	
	Total	1,393-10	465	282	3,11,028	1,103	
Tanjore	Naidavasal	121-28	91-37	43	83,340	1,943	
	Tranquebar	68-21	42-00	28	57,006	2,057	
	Negapatam	561-12	545-75	134	1,51,794	1,133	
	Total of northern works	748-61	679-12	205	2,92,940	1,429	
	Vedaranyam	3,800-00	...	206	98,623	478	
	Adampatam	176-99	...	90	1,02,668	1,140	
	Tambikakottai	360-00	...	210	87,841	417	
	Kattamavadi	70-60	...	67	59,449	887	
	Arasanagiri	61-20	...	98	45,017	459	
	Total of southern works	3,968-79	...	671	3,93,392	566	
	Total for the whole District	4,717-49	...	876	6,86,332	784	

No. II.—Statement showing area of each salt-work, number of sets of pans, number of registered owners and average out-turn of salt per owner.—(Continued.)

Districts.	Divisions.	Area occupied by salt works.	Number of sets of pans.	Number of individuals registered as holding pans.	Average annual out-turn of salt in the 10 years ending Fasli 1874-75.	Average number of maunds made by each registered holder.	REMARKS.
					Rupess.		
Madura	Vattam	112-89	68	75	57,910	772	
	Vatavandapalam	75-38	60	62	52,030	839	
	Attanturai	30-63	26	90	99,892	1,491	
	Morcholai	92-87	56	75	60,272	1,722	
	Mutaraghandapalam	129-17	125	112	1,07,687	961	
	Total	441-29	360	304	3,07,721	1,019	
Tinnevely	Vaipar	2,327	...	60	65,804	952	
	Arasadi	174	...	61	1,30,889	1,981	
	Tuticorin	159	...	43	88,235	2,059	
	Levingemuram	255	...	51	34,975	686	* Only open 3 years.
	Sivandakottai†	176	...	29	3,000	103	† Only open 1 year.
	Kollipatam	120	...	79	1,80,301	2,282	
	Kuttalagudi	167	...	20	28,550	934	
	Vizupatti	...	...	9	...	...	
	Total	3,868	...	361	5,21,744	1,445	
South Canara	Harnad	...	52	94	...	...	
	Angait	777	30	75	62,074	...	
	Vaderhobli	...	37	45	...	...	
	Total	777	119	211	62,074	294	
	Total for the whole Presidency	26,774-98	...	7,947	61,08,522	769	

APPENDIX C. No. III.—Statement showing the maximum and minimum out-turn at each division from Fasli 1275 (1865-6) and Fasli 1284 (1874-5).

Districts.	Divisions.	Maximum.		Minimum.		REMARKS.
		Fasli Year.	I. Mds.	Fasli Year.	I. Mds.	
Ganjam	Ganjam	1281	3,93,034	1276	98,934	
	Ichaspore	1275	2,57,865	1280	59,064	
	Nowpada	1278	5,31,696	1280	5,675	
	Womeravilli	1284	3,27,256	1280	1,200	
Vizagapatam	Kuppili	1283	75,163	1276	17,343	
	Konada	1283	59,616	1275	4,942	
	Bimlipatam	1281	87,121	1276	22,333	
	Karasa	1278	1,05,657	1284	556	No manufacture in the seasons of 1870, 1871, 1873, 1875.
	Balacherruvu	1278	1,20,930	1280	1,655	No manufacture 1866, 1870, 1874.
	Pentakottai	1281	9,600	1276	97	
Godavery	Penugudur	1282	5,74,694	1284	68,455	
	Mogaltur	1284	82,070	1282	466	
Kistna	Pandrola	1275	3,91,182	1284	51,118	No salt gathered in Fasli 1279-1280.
	Manginapudi	1281	3,31,330	1279	1,40,000	
	Nizampatam	1284	1,60,431	1275	76,154	
	Chinna Ganjam	1277	4,50,626	1284	13,560	No manufacture in 1867, 1870, 1873, 1875.
Nellore	Kanuparti	1282	1,68,771	1281	1,22,244	
	Padarti	1275	3,54,908	1279	52,753	No manufacture in 1870.
	Pakala	1282	1,56,082	1279	75,200	
	Tammalapenta	1282	27,850	1284	4,514	
	Iskapalli	1279	42,510	1284	2,400	No manufacture in 1865, 1866, 1870, 1871, 1872, 1874.
	Gogulapalli	1275	56,508	1282	18,000	No manufacture in 1868, 1870-1872, 1874, 1875.
	Krishnapatam	1284	1,50,206	1278	26,962	No manufacture in 1870.
	Dugarazpatam	1280	32,710	1284	12,669	
	Tada	1280	95,187	1279	40,645	
	Sannapugunta	1277	28,527	1279	6,009	

APPENDIX C. No. III.—Statement shewing the maximum and minimum out-turn at each division from Fashi 1275 (1865-6) and Fashi 1284 (1874-5).—(Continued.)

Districts.	Divisions.	Maximum.		Minimum.		Remarks.
		Fashi Year.	L. Mds.	Fashi Year.	L. Mds.	
Chinglepat	Madras	1276	21,00,593	1278	3,37,307	
	Home's Gardens	1283	1,30,904	1276	15,069	
	Chayur	1284	2,04,197	1276	41	No manufacture in 1865, 1867, 1869, 1871, 1872, 1873.
South Arcot	Covelong	1283	4,72,652	1277	4,303	
	Merkanam	1280	3,75,805	1284	1,98,715	No manufacture in Fashi 1282.
	Kilali	1275	54,345	1282	3,733	
Tanjore	Gundalam	1283	1,10,473	1282	13,064	
	Neldavasi	1275	1,10,037	1282	57,308	
	Tranquebar	1283	87,921	1280	35,363	
Madura	Negapatam	1283	2,01,600	1278	90,715	
	Vedaranyam	1284	1,80,717	1282	32,665	
	Tambikakottai	1275	1,34,332	1276	29,313	
Tinnevely	Adampattam	1275	1,67,608	1280	43,001	
	Kattamavadi	1282	84,643	1278	41,477	
	Arasagiri	1275	1,05,351	1282	5,035	
South Canara	Vattanam	1284	95,400	1280	25,200	
	Vaivarnathupattam	1270	84,000	1282	31,627	
	Antakarni	1281	50,938	1280	2,341	No manufacture in 1866, 1870.
Tanjore	Marekolam	1284	1,23,320	1275	10,355	Do. in 1870.
	Muturugumadapatam	1281	1,37,274	1275	73,750	
	Punjakali or Panabem	1275	1,529	1282	149	No salt collected in Fashi 1277.
Tinnevely	Vaipar	1283	1,41,500	1280	4,003	No manufacture in 1870.
	Arasadi	1283	1,68,229	1279	51,922	
	Tuticorin	1281	1,06,583	1280	9,500	No manufacture in 1868-1870.
Tinnevely	Lavinsapuram	1283	1,77,843	1282	8,727	
	Sivandakulam	1284	39,000	1284	90,000	
	Coilgadam	1284	2,78,815	1275	1,27,032	
Tinnevely	Kattangudi	1282	25,041	1276	93,658	
	Vidapatti	1284	18,679	1276	5,779	
	Kondapur	1275	1,21,973	1280	3,233	

APPENDIX C. No. IV.—Statement shewing the area of the largest, smallest, and of an average set of pans in each Division.

Districts.	Divisions and Stations.	Area of the largest set of pans.		Area of the smallest set of pans.		Area of an average set of pans.	According to Dr. Hutton's figures.
		Acrea.	Acrea.	Acrea.	Acrea.		
Ganjam	Ganjam	3	1	2	23		
	Ichapure	4	2	3	35		
	Nowpada	4	1	2	87		
Vizagapatam	Womeavilli	1	30	1	145		
	Kuppili	38	17	162	145		
	Konada	62	41	53	145		
Godavery	Bimlipatara	3	112	2	23		
	Karsa	3	102	2	13		
	Balacharavu	38	19	22	13		
Kistna	Pentacotta	2	124	1	28		
	Penugadara	10	50	1	49		
	Mogaltur	5	25	1	25		
Nellore	Mangalapudi	1	54	88	137		
	Nizampatnam	88	20	58	41		
	Chinna Ganjala	95	49	73	79		
Tanjore	Kanuparti	33	24	57	48		
	Padurti	1	34	1	12		
	Do. Devanampad.	1	23	1	12		
Tanjore	Palada	4	62	80	5		
	Dingnapalli	4	62	81	5		
	Turundapenta	53	50	31	37		
Tanjore	Iskapilli	239	53	104	112		
	Gogulapalli	1	50	39	112		
	Kistnapatam	2	50	95	103		
Tanjore	Duganazapattam	1	51	40	112		
	Tada	3	20	19	22		
	Sonthapuguria	1	42	34	112		
Tanjore	Neldavasi	30	65	79	69		
	Tranquebar	1	70	13	112		
	Negapatam	67	92	42	54		

APPENDIX C. No. V.—Statement shewing the rainfall on the coast of each maritime district on the East Coast during the last five years.

Districts.	Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Ganjam	1871	...	1362	1771	3956	1992	5773	4602	4540	5221	590	...	990	30783
	1872	...	120	...	915	1160	7503	7568	6426	7762	12378	2394	250	54946
	1873	...	...	578	854	1310	1523	4006	5598	13525	1422	2502	41116	
	1874	962	904	...	680	2238	5786	4396	3029	4826	14774	3600	136	39812
	1875	512	...	...	1015	1898	2910	3884	5962	16950	9118	...	...	42690
Average	...	175	337	476	1124	1720	6223	5023	5961	8214	10260	1452	594	41571
Vizagapatam ..	1871	99	215	222	447	369	472	275	315	266	44	23	18	2675
	1872	...	...	...	63	77	666	876	511	522	398	231	33	4349
	1873	...	...	10	93	165	95	781	772	185	1217	284	637	4149
	1874	50	11	...	...	90	392	645	317	835	1828	187	41	4058
	1875	48	...	...	27	193	165	332	282	1065	976	...	7	3038
Average	...	210	452	464	960	1783	3414	5218	5064	5852	9226	1630	1572	36520
Godavery	1871	50	54	125	...	251	202	720	410	335	172	633	61	2936
	1872	...	...	...	...	78	669	319	500	913	1683	327	137	3622
	1873	...	93	...	44	64	150	485	543	637	2313	250	...	4459
	1874	...	...	...	...	398	608	623	293	1022	1653	155	...	4872
	1875	20	...	18	...	318	323	423	500	953	1125	62	...	3822
Average	...	740	704	273	888	2224	3994	5280	4672	7702	12982	2874	396	41642
Kistna	1871	127	53	270	...	196	240	751	727	825	34	469	...	3716
	1872	...	...	...	...	90	626	713	643	216	1285	555	59	1692
	1873	...	...	...	...	222	149	387	206	1431	229	...	...	2644
	1874	...	...	...	...	225	510	375	504	1107	276	...	...	3850
	1875	110	...	122	68	49	53	574	860	328	1046	08	15	3803
Average	...	474	926	784	656	1320	3353	5084	6242	6661	9906	3074	148	37410
Nellore	1871	1210	...	470	310	1340	320	1200	3360	3810	4320	1030	1355	40476
	1872	...	...	...	...	1230	1370	3620	4550	3180	1100	1062	4900	40332
	1873	...	2858	...	122	694	1320	1102	2054	1318	2134	6752	1400	39064
	1874	...	200	010	...	2374	3026	1366	7406	14078	5066	3033	41676	
	1875	840	920	480	102	650	616	2828	6228	4900	8980	2680	4620	52714
Average	...	410	616	152	177	1192	1430	5505	3710	4123	11768	9714	3133	38372
Chingleput	1871	75	40	85	...	40	179	302	329	845	499	2607	108	3138
	1872	...	41	...	112	810	164	365	748	433	1185	2953	651	7364
	1873	...	1030	...	160	36	90	134	332	956	848	366	4503	
	1874	...	...	...	1008	423	539	395	980	1853	934	491	6663	
	1875	10	...	15	83	55	130	226	511	320	572	853	304	3035
Average	...	170	2226	155	620	3500	2032	3432	4828	5256	10116	16390	3840	53706
South Arcot ..	1871	40	...	115	63	193	150	272	349	376	797	1665	905	4665
	1872	...	05	68	233	745	30	615	743	363	784	2479	701	6736
	1873	05	843	...	239	88	176	125	460	497	1272	709	79	4526
	1874	...	...	...	628	305	561	571	1228	958	663	276	...	5263
	1875	33	...	03	103	198	53	248	1013	528	470	434	182	3267
Average	...	156	1776	320	1145	3724	1423	3602	5278	6384	8562	11920	2886	48794
Tanjore	1871	4538	560	1402	2481	3230	422	1726	2142	4454	6748	14666	2950	45322
	1872	394	244	...	1546	7792	181	3364	5234	3676	4704	18024	6188	51950
	1873	...	3548	...	6124	2736	1924	1090	3550	2561	12880	9974	2456	48846
	1874	138	2660	...	668	1984	2550	3370	3446	6212	6898	11014	7848	47688
	1875	...	906	200	1202	1374	911	878	4523	5771	8223	10728	2880	33782
Average	...	1614	1864	320	2405	3423	1199	2086	3780	3936	7906	13601	4464	45397
Madura	1871	4903	840	328	1342	380	...	272	276	480	2806	6008	5800	23833
	1872	960	284	035	1434	652	010	580	640	1142	1626	...	...	5970
	1873	...	3052	250	2636	1850	020	...	...	...	2420	2532	1143	14158
	1874	190	3930	760	470	380	1050	320	1114	630	3230	7800	3674	21243
	1875	904	912	384	4420	100	1020	740	660	1120	8514	8000	1430	26554
Average	...	1613	1624	444	2110	710	420	442	590	674	3679	4384	2410	19062
Tinnevely	1871	931	76	143	147	67	30	...	...	68	453	940	180	3160
	1872	...	13	42	391	23	07	...	...	183	268	908	309	1372
	1873	...	274	214	230	281	17	...	...	12	177	408	130	1796
	1874	15	115	28	51	195	20	...	...	70	331	808	91	1868
	1875	...	12	72	105	197	...	...	...	72	180	711	28	1659
Average	...	1952	380	1610	1446	1254	118	106	436	370	3920	6022	1631	20790

APPENDIX C. No. VI.—Statement showing principal facts connected with manufacture, &c., at each division for five years ending 1875.

Divisions.	Years.	Income.	Out-turn.	Date of first sampling of salt.	Date of cessation of manufacture.	Date of withdrawal of temporary police.	Date of disbandment of temporary police.	Month of commencement of storage.	Month of completion of storage.	Date of last payment of kadivaram.
Canjam.	1871	2,50,000	1,34,868	21 Mar. 71	21 June	...	...	June	August	22 Aug.
	1872	2,50,000	83,59,762	23 Jan.	22 do	...	...	March	do	18 do
	1873	3,00,000	2,57,514	23 Feb.	27 do	14 Feb.	15 July	May	do	4 do
	1874	2,50,000	2,52,990	8 Mar.	29 May	24 Jan.	8 do	do	do	24 do
	1875	1,00,000	62,071	15 April	10 June	19 Feb.	10 do	June	July	20 July
Average...		2,50,000	2,12,620	5 March	18 June	9 Feb.	11 July	May	August	11 Aug.
Ichapur.	1871	1,50,000	22,738	22 March	21 July	...	...	June	July	21 July
	1872	1,50,000	1,60,701	3 Jan.	21 March	...	...	February	May	7 June
	1873	1,50,000	2,03,309	23 Feb.	26 May	10 Feb.	3 July	May	June	28 do
	1874	1,50,000	1,63,355	17 March	9 do	1 March	30 June	do	do	17 July
	1875	1,00,000	96,094	9 April	30 do	15 Feb.	15 July	June	July	20 do
Average...		1,40,000	1,31,389	5 March	21 May	18 Feb.	6 July	May	June	4 July
Nowpada.	1871	2,50,000	1,58,385	11 March	21 June	...	...	June	Sept.	18 Sept.
	1872	2,50,000	2,55,600	4 Feb.	12 April	...	...	March	June	2 July
	1873	3,00,000	2,36,495	14 March	29 June	10 Feb.	15 July	June	July	25 do
	1874	1,00,000	10,486	30 April	10 do	1 April	15 do	do	do	25 do
	1875	4,00,000	5,98,961	18 Feb.	16 do	14 Jan.	15 do	May	...	27 Nov.
Average...		2,50,000	2,39,965	10 March	5 June	18 Feb.	16 July	May	July	25 Aug.
Hemra- vill.	1871	2,50,000	88,200	5 Feb.	20 June	...	...	June	August	25 Sept.
	1872	3,00,000	1,91,925	20 Jan.	12 do	...	...	March	do	12 do
	1873	3,00,000	2,40,871	20 do	30 do	10 Feb.	20 July	April	do	23 do
	1874	3,00,000	2,37,256	6 do	12 do	26 Jan.	26 do	May	do	29 Aug.
	1875	2,50,000	2,46,057	8 do	10 do	14 do	20 do	April	...	26 Sept.
Average...		2,50,000	2,05,781	20 Jan.	17 June	28 Jan.	22 July	April	August	16 Sept.
Ganjam District.	1871	9,00,000	4,04,100	5 Feb.	21 June	...	...	June	Sept.	25 Sept.
	1872	9,50,000	9,77,989	29 Jan.	22 do	...	...	February	August	13 do
	1873	10,50,000	9,73,789	30 do	30 do	10 Feb.	20 July	April	do	23 do
	1874	3,00,000	6,49,327	6 do	12 do	24 Jan.	26 do	May	do	25 Aug.
	1875	8,50,000	8,43,183	8 do	16 do	14 do	20 do	April	...	27 Nov.
Average...		2,10,000	7,89,717	20 Jan.	20 June	26 Jan.	22 July	May	July	29 Sept.
Karsa.	1871	...	...	...	...	...	...	...	...	...
	1872	70,000	61,150	20 Feb.	3 June	1 Feb.	30 June	April	June	27 July
	1873	...	...	...	...	...	...	...	...	...
	1874	50,000	53,356	9 March	30 May	4 Feb.	23 Aug.	June	July	5 Aug.
	1875	...	...	...	...	...	...	...	...	...
Average...		24,000	22,901	1 March	2 June	3 Feb.	27 July	May	July	1 Aug.
Palache- ravu.	1871	50,000	1,655	16 April	18 June	8 March	5 July	June	June	2 Aug.
	1872	70,000	68,050	15 Jan.	12 do	1 Jan.	30 June	March	Sept.	25 Oct.
	1873	60,000	45,280	1 March	11 July	11 do	16 July	April	July	16 Sept.
	1874	...	...	...	...	...	...	...	...	...
	1875	80,000	67,864	7 Feb.	23 do	20 Jan.	31 Aug.	April	...	12 Oct.
Average...		52,000	38,570	22 Feb.	29 June	25 Jan.	26 July	April	July	12 Sept.
Bindijatanam.	1871	60,000	16,321	1 Mar.	12 June	25 Feb.	30 June	June	July	10 July
	1872	1,00,000	85,440	19 Nov.	12 do	15 Nov.	20 do	January	do	9 Sept.
	1873	1,00,000	71,993	16 Jan.	1 July	19 Jan.	5 July	March	do	18 July
	1874	1,00,000	71,073	20 do	27 do	15 do	1 do	do	do	8 Aug.
	1875	60,000	61,497	12 Feb.	23 do	10 Feb.	25 do	do	...	15 Sept.
Average...		88,000	61,247	29 Dec.	4 July	11 Jan.	4 July	March	July	14 Aug.
Kuppil.	1871	60,000	19,560	1 Feb.	10 June	11 Feb.	10 June	April	June	14 July
	1872	80,000	51,563	1 Dec.	11 do	20 Nov.	11 do	February	do	9 do
	1873	80,000	54,783	24 Feb.	30 do	16 Jan.	30 do	March	July	19 Aug.
	1874	80,000	73,371	26 Jan.	13 do	11 do	19 do	do	do	29 July
	1875	60,000	67,310	4 Feb.	13 do	21 do	12 do	April	...	8 Oct.
Average...		72,000	52,321	23 Jan.	15 June	10 Jan.	15 June	March	July	9 Aug.

APPENDIX C. No. VI.—Statement showing principal facts connected with manufacture, &c., at each division for five years ending 1875.—(Continued.)

Divisions.	Years.	Income.	Out-turn.	Date of first sampling of salt.	Date of cessation of manufacture.	Date of withdrawal of temporary police.	Date of disbandment of temporary police.	Month of commencement of storage.	Month of completion of storage.	Date of last payment of kadivaram.
Pentacotta.	1871	25,000	3,000	10 Feb.	20 June	25 Jan.	30 June	June	June	30 July
	1872	...	12,204	21 do	15 do	31 Dec.	27 do	April	July	19 Aug.
	1873	...	2,815	11 March	30 do	11 Feb.	30 do	May	do	19 do
	1874	20	2,361	24 Feb.	8 do	5 Jan.	1 July	June	June	30 July
	1875	16,000	3,253	18 do	9 July	25 do	30 June	May	...	7 Aug.
Average...		19,000	4,732	22 Feb.	22 June	12 Jan.	20 June	May	July	9 Aug.
Konala.	1871	...	...	...	...	...	...	...	...	...
	1872	...	...	...	...	...	...	...	...	...
	1873	40,000	70,41	12 Jan.	30 June	16 Jan.	5 July	March	August	30 Aug.
	1874	50,000	64,035	8 Feb.	5 July	10 Feb.	1 do	April	do	23 do
	1875	70,000	47,116	18 do	18 do	10 do	13 do	do	...	15 Oct.
Average...		53,000	36,316	4 Feb.	17 July	2 Feb.	6 July	March	August	14 Sept.
Vizagapatam District.	1871	1,50,000	40,722	1 Feb.	...	25 Jan.	5 July	April	July	21 Aug.
	1872	3,35,000	2,78,402	19 Nov.	15 do	15 Nov.	30 June	January	Sept.	25 Oct.
	1873	3,05,000	2,45,717	10 Jan.	1 Jan.	10 Jan.	16 July	March	August	16 Sept.
	1874	3,05,000	2,67,156	20 do	27 do	5 do	23 Aug.	do	do	28 Aug.
	1875	3,00,000	2,47,032	4 Feb.	23 do	20 do	31 do	do	...	15 Oct.
Average...		2,88,000	2,15,700	12 Jan.	5 July	15 Jan.	27 July	March	August	21 Sept.
Pamugur.	1871	2,00,000	2,02,477	9 April	23 June	...	...	July	October	Dec.
	1872	3,93,000	4,08,549	2 do	15 do	...	...	June	November	Nov.
	1873	2,50,000	2,85,423	13 March	29 May	1 Mar.	30 June	May	August	Aug.
	1874	2,00,000	1,58,286	25 do	15 June	1 do	30 do	June	July	July
	1875	4,50,000	3,25,434	4 April	5 July	10 do	13 July	July	August	Aug.
Average...		2,98,600	2,76,834	30 Mar.	17 June	4 Mar.	4 July	June	Sept.	Sept.
Mogatur.	1871	...	...	...	...	...	...	...	...	...
	1872	...	...	...	...	...	...	...	...	...
	1873	20,000	17,333	8 April	30 June	1 April	30 June	June	July	July
	1874	50,000	52,072	9 Feb.	25 do	1 Mar.	30 do	July	do	Aug.
	1875	2,50,000	1,89,408	2 Mar.	1 July	10 Feb.	20 July	do	Sept.	Nov.
Average...		64,000	57,755	7 Mar.	29 June	5 Mar.	7 July	July	August	Aug.
Gudavary District.	1871	2,00,000	2,02,477	9 April	23 June	...	...	July	October	Dec.
	1872	3,93,000	4,08,549	2 do	15 do	...	...	June	November	Nov.
	1873	2,70,000	3,56,715	13 Mar.	29 May	1 Mar.	30 June	May	August	Aug.
	1874	2,50,000	2,40,348	25 Feb.	25 do	1 do	30 do	June	July	do
	1875	7,00,000	5,14,842	2 Mar.	6 July	10 Feb.	20 July	July	Sept.	Nov.
Average...		3,62,600	3,34,586	14 Mar.	26 June	22 Feb.	6 July	June	Sept.	Oct.
Pandurba.	1871	2,50,000	17,271	19 June	3 July	...	...	July	July	14 Aug.
	1872	3,60,000	1,43,758	6 Mar.	14 June	...	...	April	do	26 July
	1873	3,60,000	1,19,945	11 April	1 July	29 Mar.	9 Aug.	June	do	30 do
	1874	2,00,000	7,476	3 May	5 May	20 do	7 July	July	do	25 do
	1875	2,00,000	65,363	3 do	6 July	20 do	20 do	June	do	26 do
Average...		2,75,000	70,963	28 April	18 June	20 Mar.	22 July	June	July	30 July
Mangla- pudi.	1871	2,00,000	2,01,116	1 April	21 June	...	...	April	June	3 Nov.
	1872	3,00,000	3,39,444	1 Mar.	14 do	...	...	do	do	1 July
	1873	2,00,000	1,87,756	3 April	10 July	1 Mar.	1 July	May	August	7 Feb. 74
	1874	2,00,000	1,78,361	5 do	2 do	27 Feb.	7 do	April	July	18 Nov.
	1875	4,20,000	3,63,730	1 Mar.	8 do	3 do	31 do	do	August	4 Oct.
Average...		2,54,000	2,54,091	21 Mar.	29 June	20 Feb.	13 July	April	July	27 Oct.
Nirama- tam.	1871	1,30,000	97,397	8 Mar.	2 July	...	...	April	July	22 July
	1872	2,00,000	1,50,459	18 Feb.	15 June	...	...	do	do	11 do
	1873	2,00,000	1,50,227	3 Mar.	14 July	21 Feb.	1 July	do	do	11 Aug.
	1874	1,75,000	1,17,315	23 Feb.	1 do	24 do	5 do	March	do	13 July
	1875	2,00,000	1,73,813	2 Mar.	1 do	6 do	24 do	April	do	2 do
Average...		1,81,000	1,37,342	23 Feb.	1 July	17 Feb.	10 July	April	July	18 July

APPENDIX C. No. VI.—Statement shewing principal facts connected with manufacture, &c., at each division for five years ending 1875.—(Continued.)

Divisions.	Years.	Dittam.	Out-turn.	Date of first remitting of salt.	Date of cessation of manufacture.	Date of commencement of temporary police.	Date of discontinuance of temporary police.	Month of commencement of storage.	Month of completion of storage.	Date of last payment of dividend.
Chinnam Gajnam.	1871	6,00,000	6,46,840	24 March	24 June	...	...	Apr.	...	23 Feb.
	1872	8,00,000	2,93,400	24 April	16 do	...	...	May	...	13 Sept.
	1873	...	...	...	...	...	...	...	...	...
	1874	2,00,000	1,85,160	25 March	16 June	1 Mar.	30 June	April	...	21 Nov.
	1875	...	...	...	...	...	...	...	...	...
Average...	...	2,20,000	2,25,083	4 April	19 June	1 Mar.	30 June	April	...	22 Nov.
Kistna District.	1871	11,85,000	9,63,624	8 March	2 July	...	...	April	August	23 Feb.
	1872	11,00,000	9,27,061	18 Feb.	16 June	...	...	do	July	13 Sept.
	1873	7,60,000	4,57,928	3 March	14 July	21 Feb.	9 Aug.	do	August	27 Feb.
	1874	7,75,000	4,88,312	23 Feb.	2 do	24 do	5 July	March	July	21 Nov.
	1875	8,20,000	6,03,950	1 March	3 do	3 do	31 do	April	August	4 Oct.
Average...	...	9,40,000	6,87,976	28 Feb.	2 July	16 Feb.	25 July	April	August	2 Dec.
Kannur District.	1871	1,50,000	1,31,844	9 Feb.	7 July	...	...	March	July	18 Aug.
	1872	1,50,000	1,02,371	4 do	15 Aug.	...	...	April	August	20 Sept.
	1873	2,40,000	2,40,901	4 do	1 do	1 Jan.	31 Aug.	do	do	14 Aug.
	1874	2,00,000	1,10,089	1 do	9 Sept.	10 do	1 Oct.	do	September	12 Sept.
	1875	2,40,000	2,34,980	26 do	1 Aug.	8 do	29 Sept.	do	August	2 Aug.
Average...	...	1,96,000	1,64,037	9 Feb.	9 Aug.	6 Jan.	20 Sept.	April	August	27 Aug.
Puducherry District.	1871	2,20,000	2,21,993	5 Feb.	17 June	...	...	April	July	12 Sept.
	1872	1,80,000	1,12,635	9 do	1 Sept.	...	...	May	August	20 do
	1873	2,90,000	2,75,559	9 do	9 July	17 Jan.	22 Oct.	April	July	19 July
	1874	2,30,000	1,33,267	1 do	25 do	10 do	1 Sept.	do	August	11 Aug.
	1875	1,60,000	1,064,125	9 Mar.	17 do	8 do	27 do	do	do	...
Average...	...	2,16,000	1,91,335	12 Feb.	20 July	12 Jan.	27 Sept.	April	August	23 Aug.
Tamil Nadu.	1871	1,96,800	1,41,485	10 Feb.	9 July	...	...	April	July	20 July
	1872	1,14,000	1,10,782	17 do	9 Aug.	...	...	do	August	20 Aug.
	1873	90,000	94,300	9 do	25 May	17 Jan.	15 July	do	June	20 June
	1874	90,000	94,770	1 do	9 June	10 do	23 do	do	do	20 do
	1875	95,000	1,37,748	26 do	1 do	8 do	21 Sept.	do	July	26 July
Average...	...	1,05,300	1,16,850	13 Feb.	29 June	12 Jan.	9 Aug.	April	July	18 July
Tamil Nadu.	1871	25,000	11,298	7 March	17 July	...	...	May	July	19 Sept.
	1872	30,000	13,350	8 Feb.	25 Aug.	...	...	April	August	13 Oct.
	1873	24,000	28,300	1 March	20 July	17 Jan.	14 Oct.	May	July	19 Feb. 75
	1874	16,000	3,714	9 Feb.	17 do	21 Feb.	10 Sept.	June	do	3 Mar. 75
	1875	21,000	13,499	17 March	1 Aug.	8 Jan.	21 do	do	August	29 Dec.
Average...	...	24,200	16,492	25 Feb.	29 July	26 Jan.	25 Sept.	May	July	1 March
Isakapalli.	1871	...	...	...	...	...	...	...	...	...
	1872	...	...	...	...	...	...	...	...	...
	1873	36,000	36,590	24 Feb.	15 July	17 Jan.	28 Oct.	April	July	20 Aug.
	1874	...	...	...	...	...	...	...	...	...
	1875	30,000	25,910	17 May	1 Aug.	...	...	June	August	25 Sept.
Average...	...	13,200	13,100	6 April	23 July	...	...	May	August	7 Sept.
Gogulapalli.	1871	...	...	...	...	...	...	...	...	...
	1872	...	...	...	...	...	...	...	...	...
	1873	36,000	41,914	25 Feb.	1 Aug.	10 April	27 Oct.	May	August	3 Oct.
	1874	...	...	...	...	...	...	...	...	...
	1875	...	...	...	...	...	...	...	...	...
Average...	...	7,200	8,283	25 Feb.	1 Aug.	10 April	27 Oct.	May	August	3 Oct.
Kishnapuram.	1871	1,20,000	1,23,132	30 Jan.	1 July	...	...	March	June	13 Apr. 72
	1872	60,000	60,531	31 do	25 May	...	...	April	do	13 Mar. 74
	1873	1,08,000	1,16,783	25 Feb.	30 June	17 Jan.	21 Aug.	do	July	13 do 74
	1874	1,07,000	1,09,430	28 Jan.	1 July	10 do	1 Sept.	do	August	29 do 75
	1875	1,30,000	1,61,252	30 do	1 Aug.	8 do	4 Nov.	do	July	28 Jan. 76
Average...	...	1,09,120	1,14,231	4 Feb.	30 June	12 Jan.	22 Sept.	April	July	28 Mar.

* Rs. still due owing to a dispute as to the title to the puz.

APPENDIX C. No. VI.—Statement shewing principal facts connected with manufacture, &c., at each division for five years ending 1875.—(Continued.)

Divisions.	Years.	Dittam.	Out-turn.	Date of first remitting of salt.	Date of cessation of manufacture.	Date of commencement of temporary police.	Date of discontinuance of temporary police.	Month of commencement of storage.	Month of completion of storage.	Date of last payment of dividend.
Duganapattinam.	1871	36,000	31,522	13 Feb.	17 July	...	...	April	...	2 Dec.
	1872	24,000	17,497	1 March	1 Aug.	...	...	May	...	3 Sep. 73
	1873	24,000	25,633	28 do	1 do	21 Jan.	9 Oct.	June	...	4 Oct. 73
	1874	24,000	14,163	25 Jan.	1 Sept.	10 do	30 Sept.	do	September	20 Feb. 75
	1875	27,000	21,166	17 March	1 Aug.	11 do	3 do	do	August	...
Average...	...	27,000	22,006	23 Feb.	4 Aug.	14 Jan.	24 Sept.	May	August	14 Feb.
Tada.	1871	90,000	92,130	6 Feb.	17 July	...	...	April	...	6 Aug.
	1872	90,000	61,663	8 do	17 Aug.	...	...	do	...	27 Dec.
	1873	90,000	80,325	25 March	28 July	2 Jan.	15 Sept.	May	...	29 Aug. 74
	1874	84,000	49,912	9 Feb.	17 do	16 do	29 do	April	July	19 do
	1875	1,36,000	1,38,915	12 do	1 Aug.	12 Feb.	21 Nov.	do	do	20 do
Average...	...	96,000	84,589	18 Feb.	28 July	18 Jan.	12 Oct.	April	July	26 Nov.
Sunnampalli.	1871	20,000	15,532	10 April	17 July	...	...	May	...	20 Oct.
	1872	20,000	9,856	17 March	20 Aug.	...	...	do	...	20 Nov. 73
	1873	24,000	13,571	5 May	9 do	10 April	15 Sept.	July	September	20 do 73
	1874	14,400	3,766	8 April	17 Sept.	10 Jan.	29 do	June	do	13 do
	1875	18,000	24,165	22 March	1 Aug.	11 do	3 do	April	July	20 Aug.
Average...	...	19,280	13,638	6 April	13 Aug.	9 Feb.	16 Sept.	May	August	6 Jan.
Pettah District.	1871	7,37,800	7,69,273	30 Jan.	17 July	...	...	March	...	18 Apr. 72
	1872	6,58,000	4,93,633	31 do	1 Sept.	...	...	April	...	13 Mar. 74
	1873	9,62,000	9,56,993	4 Feb.	9 Aug.	1 Jan.	28 Oct.	do	...	19 Feb. 75
	1874	7,38,000	5,71,031	26 Jan.	17 Sept.	10 do	1 do	do	...	29 Mar. 75
	1875	8,51,000	9,22,320	30 do	1 Aug.	8 do	21 Nov.	do	August	Still due.
Average...	...	8,13,360	7,42,663	31 Jan.	16 Aug.	6 Jan.	27 Oct.	April	August	18 Sept. Next year.
Madras.	1871	33,06,165	18,34,593	21 March	31 July	...	...	May	October	December.
	1872	33,34,395	8,93,413	22 do	16 Aug.	...	...	do	September	do
	1873	18,52,952	11,51,015	16 April	13 Oct.	...	...	June	October	do
	1874	18,54,952	5,84,554	17 March	21 Sept.	...	...	May	September	do
	1875	18,52,952	19,21,401	23 Feb.	19 Aug.	...	...	April	November	do
Average...	...	24,40,282	12,76,925	20 March	2 Sept.	...	...	May	October	December.
Vandavasi.	1871	80,000	93,466	6 April	4 Aug.	...	...	June	December	December.
	1872	80,000	71,809	20 March	18 do	...	...	May	August	do
	1873	80,000	97,883	2 April	4 Sept.	...	...	do	October	do
	1874	60,000	1,14,991	11 March	20 Aug.	...	...	April	September	do
	1875	60,000	1,33,170	12 Feb.	26 Sept.	...	...	do	October	do
Average...	...	73,000	1,02,145	17 March	27 Aug.	...	...	May	October	December.
Cevallam.	1871	2,50,000	2,22,634	1 April	31 July	...	...	June	December	December.
	1872	4,00,000	77,622	9 March	31 do	...	...	May	September	do
	1873	4,00,000	4,17,452	25 do	31 Oct.	...	...	July	November	do
	1874	3,00,000	78,258	9 do	8 May†	...	...	May	September	do
	1875	4,00,000	7,78,614	16 Feb.	30 Sept.	...	...	April	October	do
Average...	...	3,50,000	3,14,788	13 March	14 Aug.	...	...	May	October	December.
Chayur.	1871	...	...	...	...	...	...	...	...	...
	1872	...	...	...	...	...	...	...	...	...
	1873	2,40,000	1,65,600	26 May	23 Sept.	...	...	August	January	...
	1874	1,50,000	16,623	21 April	4 May†	...	...	September	September	November.
	1875	2,40,000	2,52,000	11 March	23 June	...	...	April	do	December.
Average...	...	1,25,000	86,845	10 April	7 July	...	...	July	October	December.
Chinnampattinam.	1871	36,35,165	21,50,113	21 March	4 Aug.	...	...	May	December	December.
	1872	33,14,393	10,42,744	9 do	18 do	...	...	do	September	do
	1873	23,72,952	18,31,355	25 do	31 Oct.	1 March	30 Nov.	do	January	...
	1874	33,64,952	7,94,466	2 do	21 Sept.	1 do	31 Aug.	April	...	December.
	1875	25,52,952	30,85,185	12 Feb.	20 do	27 Jan.	31 Oct.	do	November	do
Average...	...	23,88,283	17,80,773	9 March	14 Sept.	18 Feb.	20 Oct.	May	November	December.

* Rs. 3-5-4 still due, the party entitled having left the district.

† Cyclone year.

APPENDIX C. No. VI.—Statement shewing principal facts connected with manufacture, &c., at each division for five years ending 1875.—(Continued)

Divisions.	Years.	Dittam.	Out-turn.	Date of first receipt of salt.	Date of establishment of manufacture.	Date of establishment of temporary police.	Date of establishment of temporary police.	Month of commencement of storage.	Month of cessation of storage.	Date of last payment of kacharam.
Merkham	1871	3,96,000	3,03,569	27 May	10 Aug.	...	...	July	September	9 Mar. 72
	1872	3,42,000	2,94,917	30 April	30 April	...	...	...	...	...
	1873	5,04,000	59,569	2 July	23 Sept.	20 April	16 Oct.	August	October	10 Apr. 74
	1874	5,04,000	59,569	16 April	6 July	10 March	6 Sept.	May	August	18 Dec. 75
	1875	3,60,000	4,93,280	1 March	24 Sept.	1 do.	10 Oct.	do	October	24 Mar. 76
Average...		4,21,260	2,15,129	3 May	21 July	21 March	30 Sept.	June	September	31 May
Gundam	1871	72,000	68,171	12 April	1 Oct.	...	...	May	September	20 Nov.
	1872	72,000	15,445	12 March	1 Sept.	...	...	do	August	12 Oct. 73
	1873	78,000	59,569	2 May	1 Oct.	15 March	3 Oct.	June	October	16 Dec.
	1874	90,000	65,710	26 Feb.	1 Sept.	20 Feb.	10 Sept.	March	September	7 do
	1875	91,200	58,548	6 March	1 Oct.	1 March	1 do	April	do	25 Nov.
Average...		80,640	60,629	24 M.	10 Sept.	3 March	16 Sept.	May	September	2 Feb.
Killo	1871	42,000	25,090	1 May	3 Sept.	...	...	June	September	16 Dec.
	1872	36,000	6,123	23 March	5 July	...	...	do	July	25 Sept.
	1873	36,000	12,658	7 May	12 Sept.	2 April	14 Oct.	July	October	16 Nov.
	1874	36,000	17,678	26 Feb.	26 Feb.	2 March	8 Sept.	April	August	24 do
	1875	42,000	42,408	11 March	3 Aug.	16 do	1 Oct.	do	do	23 Sept.
Average...		38,400	30,997	2 April	18 Aug.	17 March	28 Sept.	May	August	2 Nov.
S. Arcot District	1871	5,10,000	3,96,830	12 April	1 Oct.	...	...	May	September	9 Mar. 72
	1872	4,50,000	22,577	12 March	1 Sept.	...	...	do	August	12 Oct. 73
	1873	6,18,000	2,97,874	2 May	1 Oct.	15 March	16 Oct.	June	October	10 Apr. 74
	1874	6,30,000	1,37,297	26 Feb.	1 Sept.	20 Feb.	10 Sept.	March	September	18 Dec. 75
	1875	4,93,200	6,29,195	1 March	1 Oct.	1 March	10 Oct.	April	October	24 Mar. 76
Average...		5,40,240	2,94,755	23 March	19 Sept.	3 March	2 Oct.	May	September	27 June
Neidavassal	1871	1,20,000	1,13,987	4 March	14 Oct.	...	...	May	November	...
	1872	1,20,000	47,708	10 do	18 Sept.	...	...	do	September	...
	1873	1,20,000	1,03,750	9 do	1 Oct.	1 April	1 Oct.	do	November	...
	1874	1,20,000	78,325	2 do	16 Aug.	1 do	1 do	June	do	...
	1875	90,000	1,09,056	16 do	25 Sept.	1 do	1 do	May	do	...
Average...		1,14,000	91,567	8 March	20 Sept.	1 April	1 Oct.	May	November	...
Tirunelveli	1871	84,000	56,971	10 April	25 Oct.	...	...	July	October	...
	1872	84,000	33,283	12 March	30 Sept.	...	...	do	September	...
	1873	1,20,000	85,521	6 do	30 June	1 April	1 Oct.	May	October	...
	1874	1,20,000	64,250	5 do	31 Aug.	1 do	1 do	June	September	...
	1875	30,000	46,980	13 do	15 do	1 do	1 do	August	December	...
Average...		87,600	57,402	15 March	3 Sept.	1 April	1 Oct.	July	October	...
Negapatam	1871	2,40,000	2,34,019	30 March	16 Sept.	...	...	July	November	...
	1872	2,40,000	1,31,845	27 Feb.	16 July	...	...	May	October	...
	1873	2,00,000	3,21,565	24 Jan.	2 Oct.	1 April	1 Oct.	do	January	...
	1874	3,00,000	3,05,537	8 Feb.	28 Aug.	1 do	1 do	do	do	...
	1875	3,60,000	5,03,281	28 do	21 Sept.	1 do	1 do	April	December	...
Average...		2,38,000	2,98,910	23 Feb.	4 Sept.	1 April	1 Oct.	May	December	...
Vedurayan	1871	2,40,000	...	8 April	21 Sept.	...	...	July	December	...
	1872	2,40,000	...	16 Feb.	16 July	...	...	May	October	...
	1873	3,00,000	...	8 March	22 Sept.	1 April	1 Oct.	Storage	continuous	...
	1874	3,00,000	...	4 do	1 do	1 do	1 do	since May	1893.	...
	1875	3,00,000	...	4 do	23 do	1 do	1 do	do	do	...
Average...		2,76,000	...	26 Feb.	5 Sept.	1 April	1 Oct.	June	November	...
Thunbi-kottai	1871	1,80,000	60,552	29 March	30 Sept.	...	...	July	October	...
	1872	1,80,000	57,564	15 Feb.	25 Aug.	...	...	May	September	...
	1873	1,80,000	74,099	17 March	24 Sept.	1 April	1 Oct.	June	October	...
	1874	1,80,000	1,03,645	25 Jan.	31 Aug.	1 do	1 do	do	do	...
	1875	1,20,000	1,61,695	9 Feb.	24 Sept.	1 do	1 do	do	do	...
Average...		1,68,000	91,511	24 Feb.	14 Sept.	1 April	1 Oct.	June	September	...

* Cylcone year.

APPENDIX C. No. VI.—Statement shewing principal facts connected with manufacture, &c., at each division for five years ending 1875.—(Continued)

Divisions.	Years.	Dittam.	Out-turn.	Date of first receipt of salt.	Date of establishment of manufacture.	Date of establishment of temporary police.	Date of establishment of temporary police.	Month of commencement of storage.	Month of cessation of storage.	Date of last payment of kacharam.
Adirampai	1871	1,80,000	56,892	27 Mar.	7 Aug.	...	...	August	October	...
	1872	1,80,000	62,330	10 Feb.	25 July	...	...	May	do	...
	1873	1,80,000	99,089	10 Jan.	15 Aug.	1 April	1 Oct.	July	do	...
	1874	1,80,000	64,503	3 Feb.	17 do	1 do	1 do	June	do	...
	1875	1,80,000	1,35,940	3 do	10 Sept.	1 do	1 do	July	Nov.	...
Average...		1,58,000	91,332	14 Feb.	15 Aug.	1 April	1 Oct.	July	October	...
Chitham	1871	48,000	52,403	17 Mar.	17 Oct.	...	...	July	Nov.	...
	1872	54,000	66,543	17 Feb.	31 Aug.	...	...	do	Sept.	...
	1873	90,000	64,173	2 Mar.	1 Oct.	1 April	1 Oct.	June	October	...
	1874	90,000	65,630	1 Feb.	25 Aug.	1 do	1 do	July	do	...
	1875	60,000	86,230	25 do	14 Sept.	1 do	1 do	do	Nov.	...
Average...		74,400	67,018	24 Feb.	17 Sept.	1 April	1 Oct.	July	October	...
Aracampai	1871	48,000	45,830	15 April	4 Oct.	...	...	August	October	...
	1872	12,000	18,322	10 Feb.	11 April	...	...	May	July	...
	1873	90,000	54,261	9 Mar.	3 Oct.	1 April	1 Oct.	June	Nov.	...
	1874	90,000	72,980	1 Feb.	1 Sept.	1 do	1 do	do	Sept.	...
	1875	60,000	71,224	24 do	23 Aug.	1 do	1 do	July	October	...
Average...		60,000	52,128	2 Mar.	14 Aug.	1 April	1 Oct.	June	Sept.	...
Tanjore District	1871	11,40,000	6,31,559	4 Mar.	29 Oct.	...	...	May	Dec.	...
	1872	11,40,000	4,21,701	10 Feb.	18 do	...	...	do	October	...
	1873	13,80,000	8,07,468	24 Jan.	3 do	1 April	1 Oct.	do	January	...
	1874	13,80,000	7,83,172	25 do	2 Sept.	1 do	1 do	Feb.	do	...
	1875	11,40,000	13,15,415	3 Feb.	25 do	1 do	1 do	do	Dec.	...
Average...		14,36,000	7,49,889	6 Feb.	5 Oct.	1 April	1 Oct.	April	Dec.	...
Muthuragun	1871	1,20,000	1,35,980	14 April	22 Sept.	...	...	May	Dec.	16 Dec.
	1872	1,20,000	1,15,860	27 May	11 do	...	...	do	October	30 Oct.
	1873	60,000	73,970	13 June	1 do	...	...	July	Nov.	30 Nov.
	1874	80,000	1,09,536	29 April	17 do	...	...	March	do	24 do
	1875	1,00,000	1,26,340	8 May	16 Aug.	...	...	June	October	...
Average...		96,000	1,12,350	30 April	7 Sept.	...	...	May	Nov.	22 Nov.
Mordolam	1871	1,00,000	62,070	3 May	36 Sept.	...	...	May	October	24 Oct.
	1872	80,000	80,402	13 Mar.	12 Oct.	...	...	June	do	24 do
	1873	80,000	59,509	9 May	31 do	...	...	do	Nov.	24 Nov.
	1874	80,000	87,839	3 April	14 Sept.	...	...	May	Oct.	24 Oct.
	1875	70,000	96,934	29 Mar.	9 Oct.	...	...	do	Dec.	24 Dec.
Average...		82,000	77,847	12 April	6 Oct.	...	...	May	Nov.	11 Nov.
Attankur	1871	75,000	53,279	7 April	10 Oct.	...	...	May	Nov.	22 Nov.
	1872	50,000	48,377	15 do	10 do	...	...	July	Dec.	23 Dec.
	1873	20,000	38,045	15 July	7 do	...	...	August	do	24 July 74
	1874	60,000	54,388	1 April	17 do	...	...	May	Nov.	25 Jan. 75
	1875	40,000	42,830	12 May	13 Sept.	...	...	July	January	...
Average...		49,000	44,794	4 May	6 Oct.	...	...	June	Dec.	15 Feb.
Viravenda	1871	70,000	38,365	17 April	10 Oct.	...	...	June	Dec.	20 July 72
	1872	70,000	52,059	26 Feb.	1 Sept.	...	...	April	do	25 Dec. 73
	1873	70,000	33,090	14 July	1 Oct.	...	...	August	do	23 May 74
	1874	70,000	45,624	13 Feb.	10 do	...	...	May	do	21 July 75
	1875	80,000	63,762	4 Mar.	4 Sept.	...	...	June	do	...
Average...		72,000	51,580	3 April	29 Sept.	...	...	June	Dec.	15 Aug.
Vullanam	1871	60,000	55,933	18 April	15 Oct.	...	...	June	Dec.	13 Dec.
	1872	80,000	53,378	18 Mar.	13 do	...	...	do	do	27 do
	1873	1,10,080	46,811	23 May	7 do	...	...	August	January	9 Jan. 74
	1874	1,20,000	1,00,772	16 Feb.	18 do	...	...	April	do	28 Dec. 74
	1875	1,20,000	96,982	8 Mar.	23 Sept.	...	...	June	do	24 do
Average...		98,000	70,561	29 Mar.	9 Oct.	...	...	June	Dec.	27 Dec.

Information not given.

Information not given.

APPENDIX C. No. VI.—Statement shewing principal facts connected with manufac-
ture, &c., at each division for five years ending 1875.—(Concluded.)

Divisions.	Years.	Distm.	Out-turn.	Date of first striking of salt.	Date of com- mencement of manufacture.	Date of enter- tainment of temporary jailors.	Date of disband- ment of tempo- rary police.	Month of com- mencement of storage.	Month of cessation of storage.	Date of last payment of salt-tax.
Madura District.	1871	4,23,600	3,64,767	7 April	13 Oct.	...	...	May	December	10 July 72
	1872	3,90,000	3,50,076	16 Feb.	13 do	...	...	April	do	25 Dec. 73
	1873	3,40,000	3,43,268	9 May	31 do	...	...	June	do	24 July 74
	1874	3,10,000	3,53,204	13 Feb.	18 do	...	...	March	do	24 do 75
	1875	1,10,000	4,26,845	4 March	9 do	...	...	May	do	...
Average...		3,97,000	3,55,532	16 March	17 Feb.	...	...	May	...	30 Aug. 71
Vijayan- puri.	1871	72,000	72,456	18 May	7 Oct.	...	...	June	October	25 Jan. 72
	1872	60,000	62,740	1 March	1 Aug.	...	...	April	August	11 Feb. 73
	1873	1,20,000	1,27,220	17 do	1 Nov.	...	...	do	December	27 Dec. 73
	1874	1,20,000	90,632	5 do	4 July	...	...	do	October	21 Nov. 74
	1875	1,41,000	1,45,219	1 Feb.	2 Oct.	...	...	do	do	30 Oct. 75
Average...		1,03,200	69,632	14 March	9 Sept.	25 April	12 Oct.	April	October	12 Nov.
Arundel.	1871	1,25,855	1,24,137	3 Feb.	2 Nov.	...	...	March	December	14 Jan. 72
	1872	1,44,000	2,48,367	12 Jan.	12 Oct.	...	...	do	November	28 Nov. 72
	1873	1,30,000	1,40,449	8 March	8 Nov.	...	...	April	do	30 do
	1874	1,80,000	1,85,722	5 Feb.	22 Oct.	29 May	31 Oct.	March	do	27 Oct. 75
	1875	1,41,000	1,45,785	2 March	9 do	1 April	20 do	do	October	16 Dec.
Average...		1,54,771	1,50,498	12 Feb.	23 Oct.	25 April	25 Oct.	March	November	23 Jan.
Tuticorin.	1871	60,000	1,01,765	1 April	14 Oct.	...	...	June	December	25 Jan. 72
	1872	60,000	1,51,720	15 Feb.	22 July	...	...	March	July	20 April 73
	1873	1,44,000	1,50,905	30 Jan.	1 Nov.	...	...	do	December	18 Dec. 73
	1874	1,20,000	81,288	23 do	11 June	29 May	6 July	do	September	18 Oct. 74
	1875	1,45,000	1,64,225	8 March	9 Oct.	1 April	18 Oct.	do	October	15 Nov.
Average...		1,05,500	1,30,205	20 Feb.	5 Sept.	30 April	27 Aug.	April	October	27 Dec.
Cuddalore.	1871	1,30,000	1,09,305	3 Feb.	2 Nov.	...	...	April	November	26 Dec.
	1872	2,04,000	1,97,537	10 Jan.	12 Oct.	...	...	April	November	26 Dec.
	1873	2,40,000	1,85,434	12 March	8 Nov.	...	...	March	October	17 Nov.
	1874	2,40,000	2,46,567	14 do	8 do	28 May	6 Oct.	do	December	27 Dec.
	1875	2,10,000	2,67,394	15 Feb.	13 Oct.	2 April	15 do	do	November	4 Jan. 75
Average...		2,16,000	2,13,456	18 Feb.	26 Oct.	30 April	10 Oct.	April	November	27 Dec.
Kuttan- gudi.	1871	19,911	18,911	24 Mar.	24 Oct.	...	...	May	October	29 Jan. 72
	1872	24,000	27,572	17 Feb.	3 Nov.	...	...	March	November	29 Jan. 72
	1873	24,000	17,153	10 Mar.	10 do	...	...	do	do	2 Dec.
	1874	24,000	27,122	1 do	9 Oct.	30 May	1 Nov.	April	do	24 Feb. 75
	1875	24,000	28,436	1 do	30 do	1 April	1 do	do	do	30 Dec.
Average...		23,182	24,639	5 Mar.	2 Nov.	30 April	1 Nov.	April	November	3 Jan.
Vilup- patti.	1871	12,000	12,452	27 Mar.	13 Oct.	...	...	May	October	29 Jan. 72
	1872	12,000	12,136	21 Feb.	11 Nov.	...	...	March	November	29 Nov.
	1873	12,000	9,127	10 Mar.	10 do	...	...	April	November	29 Nov.
	1874	12,000	18,679	6 do	31 Oct.	30 May	1 Nov.	do	October	24 Feb. 75
	1875	12,000	12,091	25 do	30 do	1 April	1 do	do	November	23 Dec.
Average...		12,120	15,575	12 Mar.	1 Nov.	30 April	1 Nov.	April	November	3 Jan.
Lavan- gum.	1871	1,23,000	1,00,170	2 May	1 Nov.	...	...	May	November	15 Jan. 74
	1872	1,44,000	1,00,080	15 Jan.	7 Aug.	18 May	21 Oct.	March	September	13 Oct.
	1873	2,10,000	2,73,081	8 Feb.	9 Sept.	1 April	18 do	do	October	11 Feb. 75
	1874	2,10,000	2,73,081	8 Feb.	9 Sept.	1 April	18 do	do	October	11 Feb. 75
	1875	2,10,000	2,73,081	8 Feb.	9 Sept.	1 April	18 do	do	October	11 Feb. 75
Average...		96,600	1,03,446	27 Feb.	26 Sept.	25 April	18 Oct.	April	October	25 Dec.
Sera- namp- lam.	1871	24,000	21,037	1 Mar.	11 Oct.	12 May	13 Oct.	May	October	1 Feb. 76
	1872	24,000	21,037	1 Mar.	11 Oct.	12 May	13 Oct.	May	October	1 Feb. 76
	1873	24,000	21,037	1 Mar.	11 Oct.	12 May	13 Oct.	May	October	1 Feb. 76
	1874	24,000	21,037	1 Mar.	11 Oct.	12 May	13 Oct.	May	October	1 Feb. 76
	1875	24,000	21,037	1 Mar.	11 Oct.	12 May	13 Oct.	May	October	1 Feb. 76
Average...		24,000	21,037	1 Mar.	11 Oct.	12 May	13 Oct.	May	October	1 Feb. 76
Thiruv- elveli District.	1871	4,70,856	5,00,127	3 Feb.	2 Nov.	...	...	March	December	25 Jan. 72
	1872	5,01,560	6,07,362	19 Jan.	11 do	...	...	do	do	26 Apr. 73
	1873	8,40,000	7,34,478	20 do	10 do	...	...	do	do	19 Oct. 74
	1874	8,40,000	7,97,231	15 do	1 do	18 May	1 Nov.	do	do	7 July 75
	1875	10,20,000	11,52,570	1 Feb.	30 Oct.	1 April	1 do	do	do	11 Feb. 76
Average...		7,44,873	7,58,394	26 Jan.	6 Nov.	25 April	1 Nov.	March	December	18 Mar.

APPENDIX C. No. VII.—Statement shewing average quantity of Salt stored in each month in each district of the East Coast, during the last five years.

MONTHS.	Ganjam.	Vizagapatnam.	Godavary.	Kistna.	Nellore.	Chingleput.	South Arcot.	Tanjore.	Madura.	Thiruv- elveli.	Total.
January...	5,520	1,920	0-21	0-13	0-49	0-17	0-16	10,308*	1,755	1-01	1-99
February...	57,410	2,640	0-43	0-13	0-63	2-23	1-78	3,400*	...	1-62	6-98
March...	30,240	15,760	0-46	0-13	0-78	0-26	0-32	4,800*	...	0-44	9-98
April...	135,997	57,121	0-96	0-13	0-18	0-67	1-15	6,720*	...	0-11	1-91
May...	275,564	53,051	1-79	0-13	0-18	0-67	1-15	6,720*	...	0-11	1-91
June...	151,501	53,450	2-12	0-13	0-18	0-67	1-15	6,720*	...	0-11	1-91
July...	77,026	25,450	3-12	0-13	0-18	0-67	1-15	6,720*	...	0-11	1-91
August...	...	...	51,884	18-9	3-20	1-66	1-43	130,183	...	0-42	0-13
September...	...	...	167,826	45-6	3-23	1-66	1-43	130,183	...	0-42	0-13
October...	...	...	101,659	40-031	2-7	1-66	1-43	130,183	...	0-42	0-13
November...	...	...	10,606*	...	...	...	...	...	...	...	...
December...	...	...	763*	...	...	...	...	...	...	...	...
Total.	743,420	233,502	372,949	698,874	726,503	537,111	422,26	811,893	354,150	100-0	307-91

* Salt manufactured in 1870 at Kuppi.

† Partly manufactured and partly stored at Bahadurpet in 1872 only.

‡ Season of manufacture in the North, extends to July and August in the South.

§ Season of manufacture in the North, extends to July and August in the South.

|| Season of manufacture in the North, extends to July and August in the South.

¶ Season of manufacture in the North, extends to July and August in the South.

|| Season of manufacture in the North, extends to July and August in the South.

|| Season of manufacture in the North, extends to July and August in the South.

|| Season of manufacture in the North, extends to July and August in the South.

* Salt stored at Ponnai in 1871 and 1872 only.

† Salt received from Ponnai in 1871 and 1872 only.

‡ Salt received from Ponnai in 1871 and 1872 only.

|| Salt received from Ponnai in 1871 and 1872 only.

|| Salt received from Ponnai in 1871 and 1872 only.

|| Salt received from Ponnai in 1871 and 1872 only.

|| Salt received from Ponnai in 1871 and 1872 only.

|| Salt received from Ponnai in 1871 and 1872 only.

|| Salt received from Ponnai in 1871 and 1872 only.

* Salt of the Southern divisions only.

† Salt of the Southern divisions only.

‡ Salt of the Southern divisions only.

|| Salt of the Southern divisions only.

|| Salt of the Southern divisions only.

|| Salt of the Southern divisions only.

|| Salt of the Southern divisions only.

|| Salt of the Southern divisions only.

|| Salt of the Southern divisions only.

* Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

† Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

‡ Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

|| Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

|| Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

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|| Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

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|| Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

|| Salt stored at Negapatnam—1871, 1874 and 1875, and in December 1875 at Tranquebar.

APPENDIX C, No. VIII.—Statement showing net wastage from all causes.

Districts.	Five years ending 1869-70.							
	Actual out-turn as weighed.	Gain by weightment.	Wastage.	Recorded contents of heaps. (Col. 1—Col. 2 + Col. 3.)	Difference between actual out-turn and recorded contents.	Col. 2 per cent. of Col. 4.	Col. 3 per cent. of Col. 4.	Col. 5 per cent. of Col. 4.
	1	2	3	4	5	6	7	8
Ganjam	18,52,079	303	84,015	19,35,786	83,707	92	4.34	4.32
Vizagapatam	8,57,033	4,113	28,668	8,86,003	28,670	46	3.31	2.82
Godavery	13,76,426	3,054	1,06,569	14,79,941	1,03,515	21	7.20	6.99
Kistna	16,31,987	1,602	1,11,659	17,41,844	1,09,857	11	8.41	6.30
Nellore	22,07,145	70,652	2,37,433	23,73,926	1,66,781	2.97	10.00	7.03
Chingleput	23,57,817	7,666	1,67,697	25,17,753	1,59,936	31	6.56	6.95
South Arcot	21,11,915	3,692	2,28,529	23,36,753	2,24,837	0.16	9.78	2.62
Tanjore	6,43,841	40,116	22,177	6,32,962	+10,879	6.54	4.01	1.73
Madura	14,44,215	17,546	40,659	14,67,328	23,113	1.02	2.77	1.75
Tinnevely	17,50,821	29,467	91,151	18,12,505	61,684	1.63	5.03	3.40
Total E. Coast...	162,33,280	1,78,416	11,29,912	171,84,776	9,51,493	1.03	6.57	5.54
Malabar	14,57,901	17,360	9,906	14,59,447	+7,454	1.20	0.69	+0.51
South Canara	16,28,246	4,123	38,802	16,62,925	34,679	2.25	2.23	2.08
Total W. Coast...	30,86,147	21,483	48,708	31,15,372	27,225	.60	1.56	0.87
Total for Presidency...	193,19,427	1,99,899	11,78,620	202,93,148	9,78,711	.93	5.80	4.82
Districts.	Five years ending 1874-5.							
	Actual out-turn as weighed.	Gain by weightment.	Wastage.	Recorded contents of heaps. (Col. 1—Col. 2 + Col. 3.)	Difference between actual out-turn and recorded contents.	Col. 2 per cent. of Col. 4.	Col. 3 per cent. of Col. 4.	Col. 5 per cent. of Col. 4.
	1	2	3	4	5	6	7	8
Ganjam	30,00,847	312	1,60,482	31,61,017	1,60,170	.01	5.08	5.07
Vizagapatam	10,31,816	47	78,776	11,10,545	78,729	.09	7.09	7.09
Godavery	14,31,844	512	79,291	15,10,623	78,779	.03	5.25	5.22
Kistna	14,11,563	90	84,561	14,96,034	84,472	.01	5.65	5.64
Nellore	23,18,187	1,978	86,663	24,02,872	84,685	.08	3.61	3.53
Chingleput	38,57,476	43	2,82,741	41,40,174	2,82,698	.00	6.83	6.83
South Arcot	17,15,872	1,193	1,05,492	18,20,371	1,04,499	.07	5.80	5.73
Tanjore	10,29,164	11,176	86,334	11,04,322	75,158	1.01	7.32	6.91
Madura	14,23,755	2,039	54,290	14,76,066	52,251	.14	3.68	3.54
Tinnevely	25,61,645	7,523	1,14,112	26,68,234	1,06,589	.23	4.28	4.00
Total E. Coast...	197,82,169	24,913	11,32,942	208,90,198	11,08,029	.12	5.43	5.31
Malabar	10,17,795	8,472	28,585	10,37,908	20,113	.81	2.75	1.94
South Canara	13,85,913	2,416	23,825	14,07,322	21,409	.17	1.34	1.17
Total W. Coast...	24,03,708	10,888	52,410	24,45,230	41,522	.45	2.15	1.70
Total for Presidency...	221,85,877	35,801	11,85,352	233,35,428	11,49,551	.15	5.03	4.93
Ten years' total for Presidency...	415,05,304	2,33,700	23,63,972	436,33,576	21,28,272	.34	6.42	4.83

No. IX.—Statement showing ordinary wastage, special loss excluded.

Districts.	Five years ending 1869-70.							
	Actual out-turn weighed.	Gain by weightment.	Wastage.	Recorded contents of heaps.	Difference between actual out-turn and recorded contents.	Col. 2 per cent. of Col. 4.	Col. 3 per cent. of Col. 4.	Col. 5 per cent. of Col. 4.
	1	2	3	4	5	6	7	8
Ganjam	18,52,079	303	84,015	19,35,786	83,707	.02	4.34	4.32
Vizagapatam	8,57,033	4,113	28,668	8,86,003	28,670	.47	3.25	2.78
Godavery	13,76,426	3,054	1,06,569	14,79,941	1,03,515	.21	7.20	6.99
Kistna	16,31,987	1,602	1,11,659	17,33,694	1,06,707	.10	6.24	6.14
Nellore	22,07,145	70,652	2,37,433	22,93,801	+13,544	3.22	2.61	+ .61
Chingleput	23,57,817	7,666	1,47,121	24,97,275	1,39,458	.31	5.89	5.58
South Arcot	21,11,916	3,692	2,03,757	23,11,951	2,00,035	.16	8.82	8.66
Tanjore	6,43,841	40,116	12,703	6,16,428	+27,413	6.32	2.06	+4.46
Madura	14,44,215	17,546	40,660	14,67,329	23,114	1.02	2.77	1.75
Tinnevely	17,50,821	29,467	91,151	18,12,505	61,684	1.63	5.03	3.40
Total East Coast...	162,33,280	1,78,416	8,80,464	169,35,328	7,02,048	1.05	5.20	4.15
Malabar	14,57,901	17,360	9,906	14,59,447	+7,454	1.20	.69	+ .51
South Canara	16,28,246	4,123	38,802	16,62,925	34,679	.25	1.74	1.49
Total West Coast...	30,86,147	21,483	48,708	31,15,372	27,225	.69	1.25	.56
Total Presidency...	193,19,427	1,99,899	9,29,172	200,48,700	7,29,273	1.00	4.63	3.63
Districts.	Five years ending 1874-75.							
	Actual out-turn weighed.	Gain by weightment.	Wastage.	Recorded contents of heaps.	Difference between actual out-turn and recorded contents.	Col. 2 per cent. of Col. 4.	Col. 3 per cent. of Col. 4.	Col. 5 per cent. of Col. 4.
	1	2	3	4	5	6	7	8
Ganjam	30,00,847	312	1,59,642	31,60,177	1,59,330	.01	5.05	5.04
Vizagapatam	10,31,816	47	78,988	11,07,757	75,941	.00	6.86	6.86
Godavery	14,31,844	512	79,291	15,10,623	78,779	.03	5.25	5.22
Kistna	14,11,563	90	84,561	14,96,034	84,471	.01	5.65	5.64
Nellore	23,18,187	1,978	86,663	24,02,872	84,685	.08	3.61	3.53
Chingleput	38,57,476	43	1,36,448	40,02,032	1,35,405	.00	4.37	4.37
South Arcot	17,15,872	1,193	1,05,692	18,20,371	1,04,499	.07	5.80	5.73
Tanjore	10,29,164	11,176	36,212	10,54,200	25,036	1.06	3.43	2.37
Madura	14,23,755	2,039	54,290	14,76,066	52,251	.14	3.68	3.54
Tinnevely	25,61,645	7,523	1,14,112	26,68,234	1,06,589	.28	4.28	4.00
Total East Coast...	189,06,725	24,913	9,32,899	198,14,711	9,07,986	.13	4.70	4.57
Malabar	10,17,795	8,472	10,227	10,19,550	1,755	.83	1.00	.17
South Canara	13,85,913	2,416	23,825	14,07,322	21,409	.17	1.34	1.17
Total West Coast...	24,03,708	10,888	34,052	24,26,872	23,164	.45	1.41	.26
Total Presidency...	213,10,433	35,801	9,56,951	222,41,583	9,31,150	.16	4.24	4.16
Total, 10 years...	406,29,860	2,35,700	18,96,123	422,90,283	16,60,423	.55	4.48	3.23

No. X.—Abstract of the "Account current of salt," forwarded monthly from each district to the Board of Revenue.

The account current itself is for the whole district taken together. The receipt side shews incomes 'in the month' and 'up to the end of the month' under the following heads; (1) in store at the beginning of the year (Fasli), (2) salt delivered by manufacturers, (3) purchased from importers, (details of places and rates in a note), (4) gain by weightment, (5) confiscated salt, (6) samples, (7) spontaneous salt, (8) received from other districts, (particulars shewn in a note), (9) miscellaneous.

The other side shews 'sales' in the month and up to the end of the month under the following heads;—(1) home consumption, (2) inland ditto, (3) exportation on Government indent, (4) ditto on private trade, (5) sold to French Government, (6) wastage written off under Government sanction, (7) sent to other districts, (to be specified in a note), (8) miscellaneous. Each side is totalled and the balance is shewn under the heads, (1) wastage in last year not yet written off, (a) wholesale, (b) retail, (2) wastage in this year not yet written off, (a) wholesale, (b) retail, (3) quantity remaining in store.

There are two enclosures; one shews the particulars of salt manufactured and sold at each division in a series of columns headed respectively (1) division, (2) in store at beginning of year, (3) ditto for the year, (4) received into store in the month, (5) ditto up to end of the month, (6) received into store up to corresponding period in previous year, (7) sales up to end of the month from home consumption, (8) ditto for inland consumption, (9) ditto for exportation by sea, (10) sold to French Government, (11) total, (12) wastage written off, (13) total sales of corresponding period of previous year, (14) balance at end of month under heads, (a) wastage not written off and (b) quantity in store, (15) salt revenue up to end of the month.

The second enclosure is an 'abstract shewing the quantity of salt sold during the month and up to end of the month, with its value'. The salt is classed under the 4 heads of (1) home consumption, (a) wholesale, (b) retail, (2) inland ditto, (a) wholesale, (b) retail, (3) exportation by sea, (a) on Government indent, (b) on private account, (4) sold to French Government. The rate per maund is shewn under the heads of prime cost and duty. (It is not apparent how prime cost is ascertained), the realisations being similarly divided. And at foot is a statement of miscellaneous realisations under heads, (1) salt supplied for curing fish, (2) duty on imported salt, (3) fines, (4) savings and refunds, (5) miscellaneous.

No. XI.—Statement shewing the strength of establishment and police at each salt division in the year 1874-75.

Districts.	Divisions.	Area of land occupied by salt works.	Average number of maunds of salt received into store annually during the last 10 years (Fasli).	Superintendence and establishment in 1874-75 (strength).						Total yearly salary of establishment.	Police.	
				Deputy Collectors.	Superintendents.	Assistant Superintendents.	Clerks.	Mechanics.	Menials.		Strength of permanent police.	Strength of temporary police.
		Acres.	mds.							Rs.		
Ganjam	Ganjam	383-20	194,424	...	1	2	4	...	20	3,388	26	56
	Ichapore	674-00	165,273	...	1	1	3	...	15	2,845	22	28
	Nowpada	1,000-90	305,517	...	1	3	5	...	26	4,896	30	71
	Womeravilli	310-42	209,031	...	1	2	4	...	18	3,648	22	25
	Head Quarters	...	...	1	...	...	3	1	5	4,740	...	...
	Total...	2,567-62	874,305	1	4	8	19	1	84	19,716	100	180
Vizagapatam	Kuppli	163-00	45,066	...	1	1	...	...	14	2,388	12	18
	Konada	80-46	16,382	...	1	1	2	...	12	2,256	14	10
	Bhalipatam	199-48	31,279	...	1	1	3	...	15	2,608	12	16
	Karasa	259-93	43,112	...	1	1	2	...	12	2,256	12	...
	Balacharuvu	1,349-00	48,079	...	1	1	2	...	14	2,376	12	12
	Head Quarters	172-71	12,876	...	1	...	2	1	5	4,560	7	7
	Total...	2,224-58	206,988	1	5	5	13	1	72	16,644	69	63

* Open 1275 and 1282—84 only.

† Open 1278—1284 only.

No. XI.—Statement shewing the strength of establishment and police at each salt division in the year 1874-75,—continued.

Districts.	Divisions.	Area of land occupied by salt works.	Average number of maunds of salt received into store annually during the last 10 years (Fasli).	Superintendence and establishment in 1874-75 (strength).						Total yearly salary of establishment.	Police.	
				Deputy Collectors.	Superintendents.	Assistant Superintendents.	Clerks.	Mechanics.	Menials.		Strength of permanent police.	Strength of temporary police.
Godavery	Pennuguduru	600	275,644	...	1	2	4	...	24	4,440	45	50
	Mogaltur	400	*9,936	...	1	1	2	...	14	2,256	15	15
	Head Quarters	...	...	1	...	...	2	1	5	4,560	...	...
	Total...	1,000	285,580	1	2	3	8	1	43	11,256	60	65
Kistna	Panduraka	482-41	122,888	...	1	2	4	...	23	4,368	21	27
	Manginapudi	497-41	202,925	...	1	2	4	...	20	3,528	14	10
	Nizampatam	330-00	115,169	...	1	2	3	...	18	3,048	17	22
	Chinna Ganjam	573-00	202,240	...	1	2	4	...	19	3,708	22	2
	Head Quarters	...	...	1	...	...	2	1	5	4,560	...	...
	Total...	1,882-82	643,222	3	4	8	17	1	85	19,212	74	61
Nellore	Kanuparti	248-88	154,135	...	1	1	3	...	15	2,664	17	15
	Padurti	776-44	180,950	...	1	2	3	...	18	3,444	23	13
	Pakala	197-63	108,883	...	1	1	2	...	9	2,040	21	6
	Tummalapenta	107-93	15,741	...	1	1	1	...	4	1,044	7	4
	Iskapalli	227-18	14,504	...	1	1	2	...	12	2,304	14	...
	Gogulapalli	154-08	23,951	...	1	...	2	...	6	1,296	10	...
	Krishnapatam	223-18	73,461	...	1	1	2	...	11	2,160	14	8
	Dugarazpatam	50-00	19,245	...	1	1	2	...	8	1,860	14	4
	Tada	120-27	63,276	...	1	1	2	...	8	1,848	17	6
	Sunnappugunta	87-63	14,848	...	1	1	1	...	6	1,356	14	4
	Head Quarters	...	...	1	...	...	2	1	5	5,760	...	...
	Total...	2,223-22	668,994	1	10	9	22	1	102	25,776	150	60
Chingleput	Kattar	419-43	...	...	1	2	1	...	11	1,908	...	...
	Pulidivak	847-33	...	...	1	3	1	...	15	2,676	...	...
	Attipat	1,054-68	1,311,990	...	1	6	1	...	30	4,248	169	80
	Vayalur	1,116-00	...	...	1	3	1	...	20	2,916	...	...
	Vallur	1,275-83	...	...	1	4	2	...	25	3,984	...	...
	Vadasemmanjeri	241-66	61,592	...	1	1	...	...	5	1,128	22	4
	Home's Garden Depot	8-97	...	...	1	...	3	...	11	2,196	...	...
	Covelong	884-70	194,179	...	1	2	1	...	9	1,860	53	8
	Cheyur	522-63	75,661	...	1	1	2	...	10	1,800	36	6
	Madras Depot	66-95	...	...	1	...	14	...	57	11,328	30	1
	Head Quarters	...	...	1	...	...	3	1	5	11,016	...	...
	Total...	6,437-58	1,663,122	1	10	22	29	1	199	45,060	310	99
South Arcot	Merkanam	1,269-97	249,546	...	1	3	5	...	31	5,280	76	25
	Gundalam	123-83	61,482	...	1	4	3	...	15	2,748	12	20
	Killai	77-91	29,193	...	1	2	1	...	3	1,668	12	10
	Head Quarters	...	...	1	...	...	2	...	5	4,200	...	...
	Total...	1,471-71	340,221	1	3	9	11	...	60	13,896	100	64
Tanjore	Neidavasal	121-28	83,540	...	1	1	2	...	9	1,800	18	4
	Tranquebar	66-21	57,606	...	1	1	2	...	8	1,620	13	...
	Negapatam	561-12	232,503	...	1	4	5	...	29	5,484	31	...
	Vedaranyam	3,300-00	101,717	...	1	2	3	...	22	3,516	23	16
	Tambikakottai	360-00	87,641	...	1	2	3	...	10	2,124	20	4
	Adrampatam	176-99	102,668	...	1	2	3	...	10	2,304	24	1
	Kattamavady	70-60	59,443	...	1	1	2	...	7	1,548	12	4
	Arisanagiri	61-20	45,017	...	1	1	2	...	8	1,608	14	1
	Head Quarters	...	...	1	...	...	2	1	5	8,760	...	...
	Total...	4,717-40	770,140	1	8	14	24	1	108	28,764	155	30
Madura	Vattanam	112-89	57,010	...	1	1	2	...	8	1,668	18	7
	Vairavanadapatam	75-38	52,930	...	1	1	2	...	9	1,728	12	2
	Attankarai	30-98	29,822	...	1	1	2	...	9	1,768	10	2
	Morekolani	92-87	69,272	...	1	1	2	...	8	1,664	16	1
	Muturagunadapatam	129-17	107,687	...	1	1	2	...	9	1,728	...	5
	Head Quarters	...	...	1	...	...	2	1	5	4,560	...	...
	Total...	441-29	397,721	1	5	5	12	1	48	13,630	73	17

* Open 1282—84 only.

No. XI.—Statement showing the strength of establishment and police at each salt division in the year 1874-75,—continued.

Districts.	Divisions.	Area of land occupied by salt works.	Average number of maunds of salt received into store annually during the last 10 years (Faisis).	Superintendence and establishment in 1874-75 (strength).							Total yearly salary of establishment.	Police.	
				Deputy Collector.	Superintendents.	Assistant Superintendents.	Clerks.	Mechanics.	Menials.	Strength of permanent police.		Strength of temporary police.	
Tinnevely.....	Vaipar	Acres. 2,877	mds. 65,804	...	1	1	2	...	8	Rs. 1,728	7	8	
	Arasadi	174	120,889	...	1	1	2	...	11	1,932	7	3	
	Tuticorin	159	88,225	...	...	1	1	...	5	708	7	4	
	Levingepuram	195	*34,975	...	1	1	2	...	11	2,172	7	3	
	Coilpatam	120	180,301	...	1	1	3	...	13	2,616	8	9	
	Kuttangudi	167	28,550	...	1	2	1	...	10	1,788	14	3	
	Viziapatti	...	...	...	...	...	...	...	...	...	...	...	
	Head Quarters.....	...	...	1	...	...	2	...	75	4,200	...	...	
	Total..	*3692	518,744	1	5	7	13	...	63	15,144	50	20	
	Total for the East Coast	26,458.22	6,279,337	10	56	90	138	81	864	2,08,548	1,141	669	
South Canara ...	Kundapur	777	62,074	...	4	4	7	...	27	5,592	26	53	
	Udipi	...	19,833	...	2	...	2	...	6	1,368	6	17	
	Mangalore	...	178,676	...	2	...	3	...	8	2,172	13	20	
	Buntwal	...	28,730	...	1	...	1	...	5	948	6	...	
	Cassergode	...	21,499	...	3	...	3	...	9	2,032	6	17	
	Head Quarters.....	...	...	1	...	...	2	...	5	5,400	...	...	
Total..	777	310,762	1	12	4	18	...	60	17,532	57	107		
Malabar.....	Cannanore.....	...	60,773	...	1	...	1	...	3	804	4	...	
	Tellicherry	...	70,710	...	1	...	1	...	3	624	4	...	
	Calicut	...	126,420	...	1	...	2	...	5	1,476	4	...	
	Bey pore... ..	...	143,421	...	1	...	2	...	4	1,416	4	...	
	Ponani	...	169,475	...	1	...	1	...	3	352	4	...	
	Chowghat	...	6,163	...	1	...	...	...	2	432	...	...	
	Cochin	...	7,119	...	1	...	...	...	1	252	...	...	
	Head Quarters.....	...	...	1	...	...	2	1	5	4,560	...	...	
Total..	...	584,081	1	7	...	9	1	26	10,416	20	...		
Total for the West Coast	777	894,843	2	19	4	27	1	86	27,948	77	107		
Total for the whole Presidency...		27,235.22	7,174,180	12	75	94	195	9	950	2,36,496	1,218	776	

* Only open 1282-84.

† The difference of 176 acres between the area shown here and in Appendix A is due to the fact that Sivandakolam was only opened in 1875 and does not appear in this statement.

Details of the establishment at certain selected divisions.

NOWPADA.			Per Mensem.			Per Mensem.			Per Mensem.		
1 Superintendent.....	Rs. 125	3 Weighmen at Rupees 6	Rs. 18	2 Weighmen at Rupees 6	Rs. 12	2 Vettians at Rupees 5	Rs. 10				
1 Head Clerk	20	4 Peons at Rupees 6	24	2 Vettians at Rupees 5	10						
2 Clerks at Rupees 15	30	5 Vettians at Rupees 5	25								
1 Assistant Superintendent	25										
1 do	20										
1 do	15										
1 Cashier	15										
1 do	10										
1 Attender	8										
7 Peons at 6 Rupees	42										
8 Weighmen at 6 Rupees	48										
10 Vettians at 5 Rupees	50										
Total Rupees	408										
PAKALA.			Per Mensem.			Per Mensem.			Per Mensem.		
1 Superintendent	Rs. 70	1 Muchi	10	1 Assistant Superintendent	Rs. 15	2 Vettians at Rupees 5	10				
1 Clerk	20	1 Duffadar	12								
1 Cashier	10	28 Peons at Rupees 7	196								
1 Assistant Superintendent	20	6 Weighmen at Rupees 7	42	1 Assistant Superintendent	Rs. 15	2 Vettians at Rupees 5	10				
3 Peons at Rupees 6	18	15 Vettals at Rupees 6	90								
2 Weighmen at Rupees 6	12	1 Vetti at Rupees 5	5								
1 Vettians at Rupees 5	20										
Total Rupees	170										
ISKAPALLI.			Per Mensem.			Per Mensem.			Per Mensem.		
1 Superintendent	Rs. 70	1 Superintendent	Rs. 50								
1 Clerk	20	2 Clerks at Rupees 15	30								
1 Cashier	15	1 Cashier	10								
1 Assistant Superintendent	20	2 Peons at Rupees 6	12								
Total Rupees	170										
GUNDALAM.			Per Mensem.			Per Mensem.			Per Mensem.		
Gundalam Division.											
1 Superintendent	Rs. 70	1 Superintendent	Rs. 50								
1 Clerk	20	2 Clerks at Rupees 15	30								
1 Cashier	15	1 Cashier	10								
1 Assistant Superintendent	20	2 Peons at Rupees 6	12								
Total Rupees	170										
Gundalam Station.											
1 Assistant Superintendent	Rs. 15										
2 Vettians at Rupees 5	10										
Total Rupees	25										
Kudikadu Station.											
1 Assistant Superintendent	Rs. 15										
2 Vettians at Rupees 5	10										
Total Rupees	25										
Kambolimodu Station.											
1 Assistant Superintendent	Rs. 15										
2 Vettians at Rupees 5	10										
Total Rupees	25										
Manavari Station.											
1 Assistant Superintendent	Rs. 15										
2 Vettians at Rupees 5	10										
Total Rupees	25										
Grand Total Rupees											

* N. B.—Six of these twelve clerks really perform the duties of Assistant Superintendents, (see para. 13 of Board's Proceedings, No 1925, dated 12th July 1875).

No. XII.—Extracts from the report of the Acting Collector of Ganjam on the Palur illicit manufacture, dated 26th July 1872, No. 1378.

The locality alluded to in this case is situated on the edge of the Chilka lake and consists of a number of winding creeks separated by ridges and mounds of sand interspersed with screw-pine clumps and bushes. In the rainy season these creeks are filled from the Chilka, and when the water recedes they gradually dry and form natural depôts for the manufacture of salt, concentrated brine being available a few feet below the surface, which of itself affords an endless supply of salt earth.

It cannot be a matter for surprise that the inhabitants of the surrounding villages should, more especially at a season when cultivation had almost entirely failed, have taken advantage of their comparative isolation to supplement their ordinary means of livelihood by the manufacture of salt.

Such manufacture was in accordance with their previous habits. I find from Mr. W. Knox's letter of the 26th May 1854, No. 78 (recorded at pages 195 *et seq.* of the Memorandum on Salt, No. XVI. of Selections from the Records of the Madras Government) that some 70 years ago salt used to be manufactured in the Palur estate, and that the same villages which have now been implicated were particularly mentioned (List No. 1) as possessing localities especially suited to the purpose.

The system pursued, and the extent of land occupied by this private gully, are described in the calendars now submitted. It will be sufficient here to note that over a space of something like 70 acres were scattered pans and their accessories in the shape of brine-pits, reservoirs, and channels on a grand scale. The Police Superintendent reports the destruction of those noted in the margin.* The salt which was collected from these caches was found to weigh 277 Bengal maunds, which at the Government monopoly price represent a value of Rupees 554. Part of this salt was discovered in an abandoned gully nearer Palur than the locality already described, which contained pans in full working order.

The discovery of these pans was made by Mr. Taylor, European Head Constable, with one constable, while Captain Fickance, Superintendent of Police, Mr. Maltby, the Assistant Magistrate, and another party of constables, were in the village of Palur by surprise. In both cases the success was complete. Some 50 persons were found in the pans engaged in the process of manufacture, and of these 34 have been sentenced to various terms of imprisonment; while in the fort (so called) of Palur, in the houses of the Zemindar, his relatives and adherents, as well as in compounds, down wells, and in a variety of spots, illicit salt was found concealed.

The Police estimate that the out-turn from this gully was at least Rupees 400 per diem. Mr. Thompson, the Deputy Collector in charge of the Salt Department, has entered into a calculation to show that the aggregate out-turn for the three months in the year during which he thinks the pans may have been worked would amount to 1,000 maunds of salt, taking twenty scrapings during that period. I think it probable that both these estimates are extreme, one being too large and the other too small. It is as likely as not that the gully had been worked six months when discovered, for the extreme dryness of last season would prevent the Chilka rising to its usual height.

At all events the produce of these pans, which Captain Fickance believes to have been supplied to the markets of Chatterpore, Berhampore, Kalikote, Atigada, Gumsur, and Chikati, must have displaced a great deal of Government salt. The Deputy Collector ascertained that all the villages in the neighbourhood of these pans consumed no other salt. It is sold at 3 Pies per adda, or 12 Annas per maund, and is, it is said, used largely for mixing with Government salt. It is also exported surreptitiously across the frontier into Bengal.

The Superintendent of Police satisfied himself by a careful personal inspection that on the Bengal side of the frontier line salt is not now manufactured by the process followed at Priyagi. That such manufacture has, but not recently, been carried on there is undoubted, the remains of brine-pits, etc., testifying to the fact. It is to be noted, however, that a Bengal Police station is within half an hour's walk of the frontier, and that the people there are allowed to boil salt for their own use, provided they do not have in their possession more than five seers. There is not, therefore, so much temptation to manufacture on a large scale. This relaxation, however, of the strict rule which is in force on our side must have the effect of making our people discontented. If it is a good arrangement it should be in vogue everywhere, but I cannot myself see what is to be said in favour of it from a revenue point of view. However, it is carried out under orders from the Bengal Board of Revenue.

One of these Bengal Policemen admitted that the Priyagi gully was a matter of notoriety, but as it was not on their side of the frontier it was no business of theirs.

Captain Pickance prosecuted his enquiries along the western shores of the Chilka with the following result. I give his own words:—"Information I had received led me to expect, what I afterwards found to be the case, that, with the exception of Oodia, Alipur, and one or two other villages, illicit salt is made all along the coast. At Sooblah all the salt on hand was thrown into the water when the Palur gully was seized; at other places rather later all the heaps and reservoirs were destroyed. The village of Putra was the worst sight. There a small creek, presenting much the same formation as the Palur, was a mass of destroyed reservoirs and heaps of scrapings * * *. I found the people not at all reticent concerning their performances. They (all that I examined) admitted that they had made salt, that they had no other means of livelihood, and as they had the sanction of the Police to their proceedings they submitted no penalty had been incurred * *. The salt from Putra was, I ascertained, chiefly sent northward across the frontier by night when the guard at Burcool ceases to be preventive * *. I did not attempt to bring a charge against any of these ryots, in fact it would have been impossible; any salt they had in their possession was undoubtedly got rid of prior to my arrival, and that is one of the reasons why they were so open with me."

As to the length of time during which these proceedings have been going on, the Superintendent of Police believes from what he has gathered that this manufacture of illicit salt on the shores of the Chilka has been in force since the famine of 1865-66, when it received an impetus which developed it into a thriving trade. It is probable that the scarcity of this year caused it to assume even larger than ordinary proportions.

Captain Pickance declines to believe in the possibility of a gully carrying on a brisk trade within six or seven miles of the Government gully at Hoomma, ten of the Ganjam Police station, and six or seven of Rumbah, being unknown to any one. I entirely agree with him. It has been alleged that this knowledge was worth a regular monthly income to those concerned. There can be no moral doubt about this either.

The Superintendent of Police has marked his sense of disapprobation by dismissing the whole of the men and officers of the Ganjam, Rumbah, and Panditgam stations, on the ground that they allowed illicit salt manufacture to go on in their ranges without bringing it to notice. The difficulty in prosecuting them criminally is very great, for, though the people themselves acknowledged in conversation what had been going on, they at once declined to testify before a Magistrate, and some went so far as to deny to the Superintendent himself that they had ever seen or spoken to him. If, as is likely, persons in the higher walks of life are implicated in these transactions it cannot be a matter of surprise that a conviction is almost out of the question. The fact is the whole country makes common cause against the Government in such a case.

The same causes equally operate in regard to the subordinates of the Salt establishment. Their connivance in what was going on is at present but a matter of inference. They could not have been ignorant if the police knew it, and indeed the circumstances of the case render it a moral impossibility that they should not have known. I will say nothing more at present on this head. It is possible that more accurate information may hereafter be forthcoming.

It is evident that the present system is defective in many ways. I will indicate a few points and suggest a remedy.

It is no one's immediate sole business to detect such illegalities. No doubt the police are responsible to a certain extent, but they may not unfairly plead that their duties are such as to make it impossible to give sufficient time to this particular item. Station constables have onerous duties. The work performed by men stationed at the salt depôts renders it impossible for them to have opportunity to visit the neighbouring coast, neither does it fall in the line of their business, which is simply to guard the pans and platforms and to check receipts and sales. The revenue establishment also have their own proper duties. These preclude them from hunting up illicit pans. Their number is only sufficient for the particular work on which they are engaged. If they hear of what is going on they may say it is no business of theirs, even if they had not other good reasons for letting it alone. The Salt Superintendent used formerly to have a number of peons whom he had the power of sending out on any duty; now his establishment is limited and the duties which formerly devolved on them in regard to watching, patrol, etc., have been handed over to the police, who are not at the beck and call of the Superintendent, but carry on their own duties under the supervision of officers of their own department. The existing police force attached to the salt gullies is neither well enough manned or officered to properly find out and prevent such breaches of the salt laws as have now been brought to light.

The manufacture of salt is so enormously profitable that it is impossible to rely on a poorly paid (comparatively) beat constable to give information. The smuggler can afford to pay him well and he takes the chance of being found out. As for moral turpitude that enters as

little into his calculations as it would into an ordinary Englishman's, who does not class smuggling among the seven deadly sins. The supervision which must be exercised must be constant and must be of a high type.

Another case of difficulty is connected with the cumbrous machinery prescribed by the existing salt laws. Regulation I of 1805 is considerably out of date. The penalties prescribed by Acts XVII of 1840,* and VII of 1852, are insufficient in many cases. It is really most difficult for a policeman to know what he may or may not do. I submit that the servants of Government are entitled to clear and precise instructions. If infractions of the law are to be prevented or punished, facilities, under due precautions of course, must be furnished; otherwise there must be a half-heartedness in detection, and the most zealous efforts will probably fail. Under the present law a warrant must be obtained to search. This renders it almost impossible to detect possession or home manufacture by boiling. There is just a doubt whether the Police can arrest persons engaged in the open manufacture of illicit salt. Some years ago the Magistrate in a neighbouring district took occasion to correct a misconception which prevailed on the subject, and pointed out that the procedure in regard to breach of the salt law was, with certain exceptions, the same as against persons charged with offences the punishment of which rests with the Criminal Courts. This opinion was based on Regulation V of 1831, which however has been repealed by Act II of 1869 (General Repealing Act, Madras). I see no better way than to make certain sections of Act VI of 1871 (Madras Salt Excise) applicable, if the old laws cannot be more methodically altered or abolished. The Superintendent of Police recommends the enforcement more especially of Sections 5, 15, 16, 17, 18, 23 and 24 of the Act in question.

No. XIII.—*Conventions with France on the subject of Salt.*

1. The convention signed at London, 7th March 1875.

The trade in salt and opium throughout the British sovereignty in India, having been subjected to certain regulations, and restrictions which, unless due provision be made might occasion differences between the subjects and Agents of His Britannic Majesty and those of His Most Christian Majesty, their said Majesties have thought proper to conclude a special convention, for the purpose of preventing such differences, and removing every cause of dispute between their respective subjects in that part of the world, and in this view, have named for their respective Plenipotentiaries, viz. His Majesty the King of the United Kingdom of Great Britain, and Ireland, Robert, Earl of Buckinghamshire, a Peer of the United Kingdom, one of His Majesty's Most Honorable Privy Council in England and in Ireland, and President of the Board of His Majesty's Commissioners for the Affairs of India, and His Majesty the King of France and Navarre, the Sieur Claude Louis de La Chatre, descendant of the Princes of Deas, Count de La Chatre, Commander of the Royal and Hospitable Orders of St. Lazarus and of Mount Carmel, Honorary Commander of the Order of Malta, Knight of the Royal and Military Order of St. Louis, Lieutenant General of His Armies, and His Ambassador Extraordinary and Plenipotentiary at the Court of London, who, after having communicated to each other their respective full powers, found in good and due form, have agreed upon the following articles:—

Article 1.

His Most Christian Majesty engages to farm to the British Government in India the exclusive right to purchase, at a fair and equitable price to be regulated by that which the said Government shall have paid for salt in the districts in the vicinity of the French Possessions on the Coasts of Coromandel and Orissa, respectively, the salt that may be manufactured in the said Possessions, subject, however, to reservation of the quantity that the Agents of His Most Christian Majesty shall deem requisite for the domestic use and consumption of the inhabitants thereof, and upon the condition that the British Government shall deliver in Bengal to the Agents of His Most Christian Majesty the quantity of salt that may be judged necessary for the consumption of the inhabitants of Chandernagore, reference being had to the population of the said settlement, such delivery to be made at the price which the British Government shall have paid for the said article.

Article 2.

In order to ascertain the prices as aforesaid, the official accounts of the charges incurred by the British Government for that salt manufactured in the Districts in the vicinity of the French Settlements on the coasts of Coromandel and Orissa, respectively, shall be open to the inspection of a Commissioner to be appointed, for the purpose, by the Agents of His Most Christian Majesty in India, and the price to be paid by the British Government shall be settled according to an average, to be taken every three years, of the charges as aforesaid,

ascertained by the said official accounts, commencing with the three years preceding the date of the present convention.

The price of salt at Chandernagore to be determined, in the same manner, by the charges incurred by the British Government for the salt manufactured in the districts nearest to the said settlement.

Article 3.

It is understood that the salt-works in the Possessions belonging to His Most Christian Majesty shall be and remain under the direction and administration of the Agents of His said Majesty.

Article 4.

With a view to the effectual attainment of the objects in the contemplation of the High Contracting Parties, His Most Christian Majesty engages to establish in his Possessions on the Coasts of Coromandel and Orissa, and at Chandernagore in Bengal, nearly the same price for salt as that at which it shall be sold by the British Government in the vicinity of each of the said Possessions.

Article 5.

In consideration of the stipulations expressed in the preceding Articles, His Britannic Majesty engages that the sum of four lacs of Sica Rupees shall be paid annually to the Agents of His Most Christian Majesty duly authorized, by equal quarterly instalments, such instalments to be paid at Calcutta or Madras ten days after the bill that may be drawn for the same by the said Agents, shall have been presented to the Government of either of those Presidencies, it being agreed that the rent above stipulated shall commence from the 1st October 1814.

* * * * *

Article 10.

For the purpose of rendering this agreement permanent, the High Contracting Parties hereby engage that no alteration shall be made in the conditions and stipulations in the foregoing Articles, without the mutual consent of His Majesty the King of the United Kingdom of Great Britain and Ireland and of His Most Christian Majesty.

2. The convention between the Governments of Madras and Pondicherry, signed at Pondicherry, 18th May 1818.

With a view to carry into full and complete effect the object of those terms of the convention between Great Britain and France, signed at London, on the 7th of March 1815, which regard the trade in salt throughout the British sovereignty in India, the following articles have been agreed upon by His Excellency André Julien Count Du Puy, Peer of France, Great Officer of the Royal Order of the Legion of Honor, and M. Joseph François Dayot, Chevalier of the said Order, Administrators General of the French Establishments in India, and Captain James Stuart Fraser, Commissioner on the part of the British Government for conducting the transfer of such of these possessions as have heretofore been dependent upon the Presidency of Fort St. George.

Article 1st.

The manufacture of salt shall cease throughout the whole of the French Establishments in India during the continuance of the Honorable Company's present charter.

Article 2nd.

The French Government guarantee the strict observance of the above stipulation, and the further adoption of all such measures as depend upon them for insuring the effectual prevention of the contraband trade in salt.

Article 3rd.

The Madras Government engages to pay to the French Government, as an indemnification to the proprietors of the salt pans, the sum of four thousand Star Pagodas per annum during the continuance of the Honorable Company's present charter, if this convention be ultimately ratified.

Article 4th.

The above stipulated sum of four thousand Star Pagodas per annum shall be paid by quarterly instalments, and be considered to have commenced from the 1st January last.

Article 5th.

The Madras Government engages, independently of further confirmation, to pay the sum of four thousand Star Pagodas to the French Government for one year from the 1st January last, and to continue to fulfil the same engagement until the determination of the Supreme Government, or eventually of the authorities in Europe, shall be officially notified to the French Government in India.

Article 6th.

The British Government engages to deliver such a quantity of salt as shall be requisite for the domestic use and consumption of the inhabitants of the French settlements in India, the purchase, delivery, and subsequent sale of the said quantity being regulated according to the stipulations contained in Articles 1st, 2nd, and 4th of the convention of the 7th March 1815.

Article 7th.

The present convention shall be ratified and exchanged with the least possible delay. Done at Pondicherry this thirteenth day of May, in the year of Our Lord One Thousand Eight Hundred and Eighteen. Ratified by the Government of Fort St. George according to the terms of the fifth Article, this twenty-third day of May, in the Year of Our Lord One Thousand Eight Hundred and Eighteen.

3. The convention between the Governments of Madras and Pondicherry, for the renewal of the convention of thirteenth May 1818, signed at Pondicherry, 1st June 1837.

Concluded between His Excellency the Marquis de Saint Simon, Major General, Peer of France, Great Officer of the Royal Order of the Legion of Honor, Governor of French Establishments in India, and John Dent, Esquire, Principal Collector of the Southern Division of Arcot.

Article 1st.

The whole of the salt pans situated throughout the French Establishments in India shall continue in a state of inactivity as heretofore.

Article 2nd.

The French Government guarantee the strict observance of the above stipulation, and the further adoption of all such measures as depend upon them for ensuring the effectual prevention of the contraband trade in salt.

Article 3rd.

The Madras Government engages to pay to the French Government as an indemnification to the proprietors of the salt pans, the sum of four thousand Star Pagodas per annum.

Article 4th.

The above stipulated sum of four thousand Star Pagodas per annum shall be paid by quarterly instalments.

Article 5th.

The British Government engages to deliver such quantity of salt as shall be requisite for the domestic use and consumption of the inhabitants of the French settlements in India, the purchase, delivery, and subsequent sale of the said quantity being regulated according to the stipulations contained in the convention of the 7th March 1815.

Article 6th.

The expenses incurred for the transport of salt having been hitherto borne equally by the English and French Governments, it is agreed that they shall continue to be so during the present convention.

Article 7th.

It shall be optional with either the English or French Government to withdraw from the present convention on giving twelve months' previous notice.

Article 8th.

The present convention shall be ratified with the least possible delay. Done at Pondicherry this First day of June in the year of Our Lord One Thousand Eight Hundred and Thirty-seven.

Ratified by the Government of Fort St. George this Eighteenth day of July in the year of Our Lord One Thousand Eight Hundred and Thirty-seven.

No. XIV.—Statement showing the quantities of salt sold at each coast and inland depôt in Travancore in each of the years 1049 and 1050 M. E., nearly corresponding to 1873-4 and 1874-5.

	Salt Depôts.	Quantity of salt sold in 1049.		Quantity of salt sold in 1050.		Present selling price per maund.			REMARKS.
		I. Mds.	lbs.	I. Mds.	lbs.	Rs.	A.	P.	
1	Variyur	3,743	61½	4,597	72	2	2	0	NOTE.—The prices given in the last column came into force from the 12th March 1875, except in the case of Shencottah (marked 11) where the selling price of salt, (viz., Rs. 2-4-0) is equal to the market price of the same article ruling in Tenkasi adjusted from time to time and came into force from July current.
2	Manakudi	15,475	...	16,660	41½	2	2	0	
3	Rajakamangalam	34,165	51½	37,240	72	2	2	0	
4	Kolachel	17,864	20½	17,634	10½	2	2	0	
5	Puvar	16,760	...	15,306	10½	2	2	0	
6	V. Atorai	42,088	41	45,669	30½	2	2	0	
7	Katinankolam	3,559	...	4,150	41½	2	2	0	
8	Sherenkil	5,331	61½	7,247	51½	2	2	0	
9	Naduvengand	3,351	61½	3,581	30½	2	2	0	
10	Vernanapuram	1,329	41	1,607	72	2	2	0	
11	Shenkottah	4,756	61½	4,783	72	2	4	0	2.—The lower of the two prices is the rate at which home-made and the higher price is the rate at which imported salt are sold.
12	Kolakaday	4,917	61½	5,034	61½	2	2	0	
13	Parravur	16,421	61½	14,821	61½	2	2	0	3.—In some depôts home-made salt only and in others imported salt only are sold, while in a few others both kinds are sold. Those in which both kinds are sold, have both prices marked opposite to them. The price is the same at every depôt provided the same kind of salt is sold.
14	Quilon	23,503	56½	23,687	41	2	2	0	
15	Sastankottah	21,531	41	12,102	72	2	2	0	
16	Kayenkalam	19,102	...	10,066	72	2	2	0	
17	Kartikapalli	7,077	36	5,201	...	2	2	0	
18	Maralikari	11,980	...	7,944	30½	2	2	0	
19	Chenganur	10,527	41	8,662	41½	2	2	0	
20	Pathanamthilai	5,342	61½	6,330	51½	2	2	0	
21	Changanacheri	18,854	15½	19,032	72	2	2	0	
22	Alleppey	1,01,515	...	1,35,143	10½	2	2	0	
23	Kotiyam	8,523	51½	8,378	10½	2	2	0	
24	Manakodem	16,193	41	16,298	30½	2	2	0	
25	Panavalli	14,849	41	14,893	30½	2	2	0	
26	Kundanad	7,365	51½	6,294	41½	2	2	0	
27	Pirvan	9,925	61½	10,408	5	2	2	0	
28	Ikkaranad	4,921	72	4,687	10½	2	2	0	
29	Yeddapalli	3,307	41½	2,808	72	2	2	0	
30	Alvayi	8,075	20½	6,231	41½	2	2	0	
31	Penankadevu	3,428	20½	4,015	66½	2	2	0	
32	Vallam	9,147	...	8,129	30½	2	2	0	
33	Kodakulangara	3,306	...	3,585	30½	2	2	0	
34	Paravur	6,196	56½	5,915	20½	2	2	0	
35	Menapat	4,440	...	5,720	25½	2	2	0	
Total...		4,90,080	...	5,09,158	36	...	...	...	

APPENDIX D.

I.—Cost of Salt.

II.—Retail Prices.

III.—Distribution.

I.—Cost of salt. A.—Statement shewing details of Salt charges in the several

Districts.	Years.	Capital cost of permanent works for salt manufacture.	Sum.	Interest at 4 per cent.	Repairs and temporary works.	Assessment on cultivable land.	Kudivaram.	Cost of Salt imported.	Capital cost of permanent works for storage and revenue purposes.	Sum.
		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
GANJAM.	1865-6	35,621	7,198	1,425	2,312	452	53,804	...	23,081	23,081
	1866-7	...	1,648	1,712	3,726	452	90,756	...	37	23,118
	1867-8	...	1,519	1,779	2,593	452	40,692	...	3,713	23,118
	1868-9	...	4,527	45,986	1,840	452	65,780	...	7,110	26,831
	1869-70	...	100	50,513	2,021	452	86,000	...	2,238	33,941
	1870-1	...	...	50,613	2,025	452	67,864	...	1,120	36,199
	1871-2	...	3,000	50,613	2,703	452	58,306	...	3,232	37,319
	1872-3	...	2,000	53,613	2,025	452	50,039	...	4,934	40,551
	1873-4	...	...	53,613	2,145	452	75,871	...	5,677	45,485
	1874-5	...	...	55,613	2,225	502	53,735	...	1,856	51,162
	Total.	19,922	55,613	19,422	30,218	4,620	6,42,847	...	29,937	53,018
VIZAGAPATAM.	1865-6	14,998	12	14,998	600	202	1,561	...	18,282	18,282
	1866-7	...	...	15,010	600	202	10,390	...	...	18,282
	1867-8	...	1,904	15,010	600	202	14,197	...	1,053	18,282
	1868-9	...	4,225	16,914	677	202	23,592	...	7,678	19,337
	1869-70	...	4,650	21,139	845	594	24,938	...	...	27,015
	1870-1	...	2,000	23,789	1,032	594	8,213	...	403	27,015
	1871-2	...	223	27,789	1,111	752	4,764	...	...	27,424
	1872-3	...	5,900	28,012	1,120	760	20,251	...	860	27,424
	1873-4	...	1,800	33,912	1,356	760	18,308	...	...	28,224
	1874-5	...	...	33,712	1,428	760	19,182	...	...	...
	Total.	20,714	35,712	9,369	31,575	5,028	1,45,186	...	9,542	28,224
GODAVERY.	1865-6	...	...	...	2,375	500	4,946	...	...	...
	1866-7	...	...	...	1,047	300	46,637	...	...	...
	1867-8	...	...	...	575	300	20,212	...	...	...
	1868-9	...	...	...	670	300	15,399	...	...	...
	1869-70	...	...	...	358	300	31,782	...	...	...
	1870-1	...	...	...	1,211	300	19,504	...	...	...
	1871-2	...	...	...	1,225	300	22,308	...	...	...
	1872-3	2,850	...	...	1,264	350	34,044	...	7,227	7,227
	1873-4	2,915	2,850	114	1,512	350	25,522	...	2,100	15,634
	1874-5	100	5,765	231	1,900	350	20,030	...	990	17,734
	Total.	5,865	5,865	345	12,167	3,150	2,40,384	...	18,724	18,724
KISTNA.	1865-6	...	...	...	144	100	22,710	...	54,499	54,499
	1866-7	...	...	...	189	100	27,519	...	4,153	58,657
	1867-8	...	...	...	1,416	100	27,432	...	3,800	62,457
	1868-9	...	...	...	641	100	66,512	...	...	62,457
	1869-70	...	...	...	88	100	44,322	...	...	62,457
	1870-1	...	...	...	696	100	20,394	...	2,314	62,457
	1871-2	...	...	...	1,257	100	79,495	...	1,369	64,770
	1872-3	...	...	...	157	100	71,251	...	289	66,139
	1873-4	...	...	...	567	100	33,181	...	1,232	66,423
	1874-5	...	...	...	80	100	40,358	...	152	67,710
	Total.	...	...	...	5,175	1,000	4,33,174	...	13,363	67,862
NELLORE.	1865-6	...	...	...	565	45	70,201	...	16,600	16,600
	1866-7	...	...	...	1,546	45	61,635	...	...	16,600
	1867-8	...	...	...	1,067	45	68,654	...	1,622	16,600
	1868-9	...	...	...	1,903	45	33,485	...	395	18,222
	1869-70	...	...	...	557	45	57,488	...	2,330	18,617
	1870-1	...	...	...	2,068	45	25,469	...	2,306	20,947
	1871-2	...	...	...	1,675	45	63,779	...	5,572	23,253
	1872-3	...	...	...	2,051	45	39,752	...	11,694	28,825
	1873-4	...	...	...	1,835	45	80,941	...	22,998	40,519
	1874-5	1,178	...	...	3,123	45	47,621	...	6,827	63,517
	Total.	1,178	1,178	...	16,293	450	5,49,025	...	53,744	70,344

Districts and interest on outlay on permanent works, for ten years ending 1874-75.

Interest at 4 per cent.	Repairs and temporary works.	Establishment.	Contingencies.	Police.	Miscellaneous.	Capital cost of sundry permanent works.	Sum.	Interest at 4 per cent.	Repairs and temporary works.	Miscellaneous realizations and recoveries.
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
923	577	21,255	2,061	15,612	3,454	15,465				
923	984	19,733	1,279	17,181	4,145	67	15,465	619	576	607
925	1,378	21,499	938	20,831	5,933	1,634	15,465	619	245	485
1,072	981	21,548	1,371	23,672	5,503	4,579	15,532	621	173	376
1,358	1,069	21,504	1,365	19,028	5,377	23	17,216	689	4,412	30
1,448	457	21,904	1,374	21,182	5,816	453	21,795	872	1,112	93
1,493	1,191	21,311	2,171	23,325	6,611	2,353	21,318	873	910	20
1,622	3,095	20,310	3,031	20,740	5,467	1,224	22,261	890	536	282
1,819	1,623	20,561	4,259	23,693	5,428	5	24,619	965	738	179
2,046	3,233	18,597	3,629	23,667	6,664	2,123	25,813	1,034	1,229	76
							25,848	1,034	1,523	831
13,632	14,617	2,09,322	21,678	2,08,931	54,598	12,506	27,971	8,236	11,461	2,999
						10,307				
731	840	13,714	713	9,601	154	1,617	10,307	412	944	37
731	1,452	13,478	532	9,953	749	869	11,924	477	1,630	37
731	1,247	12,590	762	10,371	2,208		12,793	512	1,400	47
773	73	13,219	635	10,379	1,557	2,560	12,793	512	2,625	14
1,081		12,916	683	9,130	1,962		15,353	614	2,564	7
1,081	1,099	14,094	1,132	8,930	2,142	3,792	15,353	614	3,224	17
1,081	145	14,086	1,377	11,630	1,586	257	19,145	766	530	1,293
1,097	150	14,373	1,227	10,199	1,303		19,402	776	400	58
1,097	400	14,524	1,844	14,851	1,475	148	19,402	776	140	318
1,129	3,066	16,669	4,278	15,018	3,451		19,550	782	250	55
9,532	8,472	1,39,663	13,183	1,09,567	16,587	9,243	19,550	6,241	13,757	1,883
...	169	9,705	843	8,843	416					55
...	315	8,806	742	9,110	2,491					443
...	175	8,866	676	9,081	2,033					763
...		8,631	553	9,084	1,313					11
...	220	8,910	633	9,341	1,872					168
...	96	9,039	920	8,934	2,333					1
...	98	8,871	870	9,051	1,064					48
230	234	9,011	1,161	9,020	2,648	450				16
625	350	11,310	1,570	11,988	1,504	2,728	450	18	200	12
709	1,175	11,121	1,784	12,794	1,866	1,625	3,178	127	50	5
1,623	2,832	94,270	9,752	96,746	17,680	4,803	4,803	145	250	1,522
						2,065				
2,180	3,126	19,122	1,384	13,277	8,032	...	2,065	83	3,505	242
2,346	1,409	19,282	920	11,363	4,501	...	2,065	83	2,897	183
2,498	2,320	22,031	1,026	14,441	6,123	...	2,065	83	1,040	664
2,498	1,070	18,926	1,153	14,323	5,147	...	2,065	83	1,906	66
2,498	743	19,205	976	13,395	9,111	...	2,065	83	1,153	124
2,498	783	19,005	1,232	13,711	2,666	...	2,065	83	1,026	13
2,591	1,049	19,039	1,963	14,114	11,778	...	2,065	83	...	32
2,645	1,080	19,337	2,342	13,141	5,319	...	2,065	83	256	57
2,657	613	19,141	2,709	13,003	2,826	...	2,065	83	136	109
2,708	715	18,841	1,768	12,585	8,253	77	2,065	83	...	5
25,119	12,903	1,93,979	15,978	1,33,353	63,756	77	2,142	830	11,919	1,495
						276				
664	130	29,822	1,797	26,450	1,711	1,008	276	11	...	31
664	15	24,375	1,030	25,832	2,618	523	1,284	51	400	15
664	1,247	25,552	1,312	26,553	1,945	503	1,809	72	1,034	182
729	2,505	25,076	1,229	26,129	2,448	4,673	2,312	92	1,643	41
745	2,001	26,043	1,163	24,858	6,724	158	6,985	279	417	44
838	1,593	25,504	2,666	27,036	3,037	...	7,143	286	1,184	87
930	1,014	25,670	3,749	25,868	3,688	247	7,143	286	1,165	249
1,153	1,463	25,718	4,258	25,832	7,393	9,144	7,390	296	3,233	270
1,621	1,021	25,734	4,473	25,393	3,797	1,200	16,334	660	2,898	120
2,541	2,876	25,765	4,323	18,639	3,231	12,321	17,734	709	2,598	240
10,549	13,865	2,59,264	26,000	2,52,590	36,642	29,779	30,055	2,742	14,632	1,279

[APPENDIX D.]

I.—Cost of salt. A.—Statement shewing details of Salt charges in the several

Districts.	Years.	Capital cost of permanent works for salt manufacture.	Sum.	Interest at 4 per cent.	Repairs and temporary works.	Assessment on cultivable land.	Kudavarum.	Cost of salt imported.	Capital cost of permanent works for storage and revenue purposes.	Sum.
CHINGLEPUT.	...	Rs. 81,984	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs. 78,613	Rs.
	1865-6	12,325	81,984	3,279	10,968	191	1,90,486	...	8,249	78,613
	1866-7	1,640	94,309	3,772	...	191	2,12,047	...	13,863	85,863
	1867-8	...	93,949	3,838	28,332	191	1,69,807	...	15,397	1,00,735
	1868-9	16,637	95,949	3,838	28,332	191	83,575	...	83,575	...
	1869-70	10,157	1,32,586	5,303	11,090	191	1,77,216	...	19,740	1,16,122
	1870-1	16,639	1,32,743	5,710	18,736	191	10,720	...	10,720	1,35,862
	1871-2	9,035	1,59,382	6,375	29,630	191	1,62,072	...	399	1,46,532
	1872-3	19,386	1,68,417	6,737	29,533	191	2,14,969	...	12,194	1,46,381
	1873-4	7,671	1,88,003	7,320	33,765	191	1,06,508	...	5,732	1,60,171
SOUTH ARCOT.	1874-5	3,073	1,95,674	7,827	30,434	191	1,88,835	...	25,230	1,65,907
	Total.	1,16,763	1,98,747	54,192	2,15,725	1,910	15,91,383	...	19,560	1,91,137
	...	5,420	...	...	...	...	...	...	18,150	...
	1865-6	...	5,420	217	1,900	485	16,374	...	...	18,150
	1866-7	...	5,420	217	177	485	48,168	...	...	18,150
	1867-8	1,059	5,420	217	30	485	84,114	...	3,637	18,150
	1868-9	461	6,479	259	18	485	38,777	...	988	21,787
	1869-70	666	6,940	278	1,123	485	57,593	...	1,250	22,775
	1870-1	...	7,606	304	1,413	485	50,187	...	1,376	24,025
	1871-2	117	7,606	304	1,413	485	37,854	...	5,762	25,401
TANJORE.	1872-3	830	7,723	309	1,073	485	1,938	...	2,787	31,163
	1873-4	6,520	8,553	342	1,719	485	30,579	...	3,773	33,950
	1874-5	9,462	15,073	603	1,589	485	13,255	...	6,197	37,723
	Total.	19,115	24,535	3,050	10,583	4,850	3,23,259	...	25,770	48,920
	...	10,854	...	...	...	...	...	...	27,932	...
	1865-6	3,805	10,854	434	1,193	217	63,575	...	16,922	27,932
	1866-7	563	14,659	585	133	217	87,040	...	14,007	44,854
	1867-8	1,382	15,227	609	255	217	59,168	...	27,542	58,861
	1868-9	475	16,809	664	2,228	217	85,174	...	29,232	86,403
	1869-70	118	17,084	683	219	217	69,807	...	29,193	1,15,685
MADURA.	1870-1	55	17,202	683	933	217	55,959	...	2,484	1,44,983
	1871-2	25	17,257	690	5,930	217	62,024	...	4,507	1,47,387
	1872-3	1,737	17,262	691	809	217	43,168	...	2,325	1,51,374
	1873-4	4,975	19,019	761	1,200	217	83,003	...	2,045	1,54,197
	1874-5	530	23,994	960	...	217	78,097	...	15,480	1,56,242
	Total.	13,670	24,524	6,760	10,530	2,170	6,57,017	...	1,43,796	1,71,722
	...	...	...	...	...	...	...	...	...	...
	1865-6	...	...	...	...	...	37,433	...	...	...
	1866-7	426	...	17	...	...	44,182	...	120	...
	1867-8	...	426	17	...	...	31,190	...	...	120
TINNEVELLY.	1868-9	...	426	17	...	...	31,312	...	4,421	129
	1869-70	4,435	426	17	21	...	26,501	...	1,032	4,641
	1870-1	240	6,911	276	...	...	15,345	...	605	5,173
	1871-2	...	7,151	286	...	...	34,344	...	1,783	6,178
	1872-3	77	7,223	286	...	...	22,424	...	150	7,061
	1873-4	1,081	7,223	289	...	...	25,336	...	401	8,111
	1874-5	1,344	9,309	379	...	...	36,527	...	3,898	8,512
	Total.	2,633	9,553	1,560	21	160	3,12,914	...	12,410	12,410
	...	2,056	...	...	...	...	...	...	29,163	...
	1865-6	144	2,056	82	70	533	43,663	...	144	29,163
	1866-7	...	2,200	88	791	533	53,462	...	50	29,397
EAST COAST.	1867-8	...	2,200	89	220	533	44,426	...	3,260	29,357
	1868-9	...	2,200	88	769	533	27,133	...	...	32,617
	1869-70	...	2,200	88	...	533	30,972	...	1,500	32,617
	1870-1	300	2,200	88	600	533	24,510	...	1,440	34,117
	1871-2	1,565	2,300	100	...	533	44,152	...	2,350	35,357
	1872-3	5,478	4,085	161	568	568	46,831	...	9,459	37,307
	1873-4	5,051	9,543	382	270	568	65,020	...	12,833	47,366
	1874-5	1,100	14,594	583	300	592	70,376	...	14,200	60,201
	Total.	13,638	15,694	1,750	3,181	5,459	4,50,448	...	45,239	74,401
	...	2,20,588	3,71,521	96,461	3,38,138	28,797	53,46,397	...	4,88,002	7,31,322

APPENDIX D.]

districts and interest on outlay on permanent works, for ten years ending 1874-75.

Interest at 4 per cent.	Repairs and temporary works.	Establishment.	Contingencies.	Police.	Miscellaneous.	Capital cost of sun-dry permanent works.	Sum.	Interest at 4 per cent.	Repairs and temporary works.	Miscellaneous realizations and recoveries.
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
3,145	456	33,437	1,029	35,705	80,159	994	...	...	...	2,134
3,474	608	35,194	945	37,796	97,649	...	994	40	16	926
4,020	893	42,633	1,124	41,119	68,460	246	894	40	1,466	67
4,645	6,283	48,139	1,444	40,181	32,321	6,397	1,249	50	730	202
5,134	2,550	45,003	1,165	42,144	83,788	2,000	7,637	306	209	182
5,853	2,695	44,885	1,020	41,810	95,330	9,431	9,637	386	1,419	65
5,879	9,429	45,664	4,662	40,972	78,746	3,260	15,053	753	...	23
6,497	1,853	44,339	7,744	41,924	39,862	5,260	22,268	891	...	28
6,636	7,050	45,152	7,112	43,253	61,310	...	27,528	1,101	...	58
7,645	5,332	44,945	4,110	44,119	34,938	403	27,528	1,101	356	10,215
53,157	37,169	4,27,399	30,355	4,02,023	6,93,063	27,931	27,931	4,678	4,196	13,900
726	1,095	15,011	883	15,907	2,153	447	4,630	185	...	1,739
726	...	12,737	576	15,762	4,772	475	5,077	203	905	2,509
726	20	14,286	992	15,933	3,615	938	5,552	222	...	2,528
871	...	13,789	923	12,815	6,663	321	6,490	260	1,076	1,228
911	220	13,602	838	14,170	2,739	700	6,811	272	...	4,081
961	668	13,142	1,018	14,459	7,001	800	7,511	300	...	2,656
1,016	2,496	13,460	1,073	14,484	9,407	...	8,311	332	...	2,333
1,246	1,999	14,039	1,344	15,059	6,560	...	8,311	332	...	3,396
1,358	4,302	14,180	1,325	14,055	36,320	...	8,311	332	...	2,670
1,399	8,031	14,156	1,315	12,434	35,497	344	8,311	332	...	4,794
10,050	18,891	1,37,713	10,288	1,45,078	1,21,727	4,025	8,655	2,770	1,981	27,982
1,117	...	17,303	2,067	22,917	3,673	...	12,185	487	...	164
1,794	...	21,470	1,761	23,762	12,283	1,452	12,185	487	...	200
2,354	3,448	25,127	2,405	23,405	21,268	1,298	13,637	545	835	174
3,456	5,721	25,101	2,431	22,273	2,477	1,979	14,937	597	155	193
4,027	4,525	25,365	2,173	19,095	8,396	...	16,014	641	527	5,717
5,475	3,455	25,237	2,933	18,755	3,061	...	16,014	641	877	1,101
5,895	5,971	23,556	4,103	19,276	4,247	...	16,014	641	1,174	64
6,075	4,343	25,689	3,140	20,288	6,047	2,191	16,014	641	950	113
6,168	5,485	26,743	3,009	20,930	15,511	347	18,263	728	914	31
6,249	5,892	28,491	2,667	21,552	14,499	260	18,552	742	2,358	1,107
43,530	41,649	2,46,251	26,563	2,12,164	91,374	6,627	18,812	6,150	3,000	8,864
...	...	...	...	...	...	...	8,520	...	...	...
...	...	16,386	1,496	9,604	2,124	...	3,320	141	...	153
...	679	15,302	1,252	9,680	1,756	...	3,320	141	...	571
5	...	15,795	1,149	9,657	1,645	...	3,320	141	2,161	156
5	2,433	12,602	1,269	9,551	1,305	...	3,320	141	...	109
182	4,518	12,815	1,436	9,604	1,379	...	3,320	141	722	116
223	893	12,842	2,014	10,818	92	...	3,320	141	1,460	264
247	390	12,709	1,820	9,637	1,602	...	3,320	141	220	133
318	395	12,985	1,639	12,090	1,179	...	3,320	141	200	264
324	664	12,851	1,783	11,572	1,775	...	3,320	141	298	285
340	487	12,982	1,953	11,025	3,940	...	3,320	141	150	125
1,644	10,423	1,37,269	15,826	1,03,233	16,797	...	3,520	1,410	5,211	2,182
1,166	757	16,619	999	6,203	1,467	1,875	15,595	624	1,898	96
1,172	1,050	15,533	1,154	6,171	3,184	949	17,470	699	1,602	56
1,174	...	16,356	1,308	6,305	7,366	500	18,419	737	1,013	20
1,305	119	15,177	1,043	6,533	2,931	...	18,919	757	...	52
1,305	11	13,872	1,203	6,834	1,954	...	18,919	757	...	100
1,385	1,215	13,016	853	6,909	1,908	330	18,919	757	2,450	70
1,422	1,576	12,081	906	6,650	2,720	1,765	19,249	770	3,475	19
1,516	820	12,759	1,173	7,275	2,769	1,691	21,014	841	1,350	50
1,895	1,547	13,356	3,319	7,447	3,505	1,359	22,705	908	820	3,865
2,408	2,756	14,128	4,625	8,683	4,507	925	24,064	962	300	250
14,723	9,851	1,43,847	16,688	69,016	32,351	9,394	24,989	7,812	12,908	4,578
1,83,564	1,70,679	19,88,877	1,86,211	17,93,706	11,44,575	1,04,383	1,68,428	41,014	84,375	66,691

[APPENDIX D.]

I.—Cost of salt. A.—Statement showing details of Salt charges, in the several

Year.	Capital cost of permanent works for salt manufacture.	Sum.	Interest at 4 per cent.	Repairs and temporary works.	Assessment on cultivable land.	Kudivaram.	Cost of Salt imported.	Capital cost of permanent works for storage and revenue purposes.	Sum.
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
1865-6	...	...	...	...	...	...	3,03,412	25,200	25,200
1866-7	...	...	...	...	...	...	2,67,992	...	25,200
1867-8	...	...	...	...	...	...	2,28,475	...	25,200
1868-9	...	...	...	...	...	...	2,55,358	...	25,200
1869-70	...	...	...	...	...	...	2,41,263	...	25,200
1870-1	...	...	...	...	...	...	5,60,008	...	25,200
1871-2	...	...	...	...	...	...	2,59,995	...	25,200
1872-3	...	...	...	...	...	...	2,50,105	...	25,200
1873-4	...	...	...	...	...	...	2,49,496	...	25,200
1874-5	...	...	...	...	...	...	2,71,085	7,917	25,200
Total...	...	...	...	...	...	...	25,93,099	7,917	33,117
1865-6	...	...	...	...	2,155	2,839	2,41,065	5,122	5,788
1866-7	...	...	...	...	1,762	13,469	90,010	1,146	11,910
1867-8	...	...	...	...	1,395	6,340	72,910	7,158	13,056
1868-9	...	...	...	...	1,322	3,355	1,35,239	12,795	20,214
1869-70	...	...	...	...	1,343	7,502	96,760	3,000	32,349
1870-1	...	...	...	...	1,223	3,729	84,695	4,343	42,549
1871-2	...	...	...	...	1,254	363	1,16,317	3,650	46,552
1872-3	...	...	...	...	1,330	1,154	2,06,689	11,531	50,752
1873-4	...	...	...	...	1,418	4,537	78,688	5,920	62,283
1874-5	...	...	...	...	1,549	5,494	88,284	1,800	66,203
Total...	...	...	...	...	14,823	50,782	12,05,657	62,215	68,003
T COAST.	...	...	...	...	14,823	50,782	37,98,756	70,132	1,01,120
INDENCY.	2,20,588	2,71,521	96,461	3,38,136	43,626	53,97,119	37,98,756	5,55,134	8,52,442

APPENDIX D.]

vii

districts and interest on outlay on permanent works, for ten years ending 1874-75.

Interest at per cent.	Repairs and temporary works.	Establishment.	Contingencies.	Police.	Miscellaneous.	Capital cost of sum-dry permanent works.	Sum.	Interest at 4 per cent.	Repairs and temporary works.	Miscellaneous realizations and recoveries.
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
1,008	1,294	6,837	3,911	...	23,406	...	...	...	...	30
1,008	1,567	5,351	86	...	4,873	...	...	...	...	6
1,008	1,823	5,843	32	...	5,956	...	...	...	...	2
1,008	1,893	5,324	30	...	4,590	...	...	...	...	55
1,008	3,072	5,965	63	...	4,198	...	...	...	...	123
1,008	2,392	6,270	57	...	2,390	...	...	...	...	116
1,008	2,410	6,056	71	...	2,747	...	...	...	...	330
1,008	4,164	5,734	506	790	3,937	...	...	...	...	109
1,008	3,465	5,994	227	3,564	2,456	...	...	...	...	434
1,008	2,746	6,152	340	3,259	3,391	...	...	...	...	272
10,080	24,346	60,041	5,323	7,413	64,244	...	...	...	...	1,477
231	1,364	17,502	1,956	15,112	6,547	...	...	...	...	6,085
476	1,870	17,172	981	14,503	6,370	...	...	...	...	8,376
522	1,745	18,397	1,090	10,192	6,060	...	...	...	...	10,419
809	1,809	18,302	587	10,029	7,949	...	...	...	...	8,843
1,318	3,384	19,163	563	10,582	4,960	...	...	...	...	6,255
1,702	4,042	19,534	625	10,995	6,586	...	...	...	...	3,949
1,876	2,915	18,549	1,068	11,587	6,737	6,930	...	...	...	2,907
2,030	2,625	17,541	1,178	12,125	4,918	6,930	6,930	277	243	1,819
2,491	2,210	17,424	953	10,009	3,324	6,930	6,930	277	300	1,523
2,643	3,005	17,541	1,556	7,837	7,535	6,930	6,930	277	410	2,167
14,103	25,469	1,80,125	10,537	1,13,571	60,986	6,930	6,930	831	953	52,350
24,183	50,315	2,40,166	15,890	1,20,984	1,25,230	6,930	6,930	831	953	53,827
2,07,747	2,20,994	22,22,043	2,02,101	18,60,690	12,69,905	1,11,315	1,75,358	41,845	85,328	1,20,518

I.—Cost of salt. B.—Statement showing the calculation.

	GANJAM.			VIZAGAPATAM.			GODAVERY.			KISTNA.		
	Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.		
Quantity made or imported...	85,83,882			19,83,580			28,95,908			61,36,995		
Spontaneous salt ...	23,130			1,343			...			45,434		
From other districts...	...			...			...			...		
Gain by weighing...	630			4,160			3,566			1,582		
Miscellaneous...	639			1,903			254			63		
Total ...	86,63,671			19,41,586			28,99,728			61,94,394		
Deduct wastage ...	2,44,497			1,11,859			1,86,860			1,96,220		
Discount—ordinary ...	1,61,520			3,560			2,560			1,62,436		
Do. —special ...	...			...			...			3,722		
Wastage in transit ...	...			...			...			942		
Total ...	4,06,017			1,15,219			1,89,220			3,63,322		
Net quantity ...	81,57,554			18,26,367			27,10,508			58,31,062		
	Amount.			Amount.			Amount.			Amount.		
	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.
Land assessment ...	4,629	0	0.1	5,028	0	0.5	3,150	0	0.2	1,000	0	0
Payment to manufacturers or importers ...	6,42,847	1	3.1	1,45,186	1	3.2	2,40,384	1	5.0	4,33,174	1	2.4
Cost of salt received from other districts ...	...	...	...	...	...	...	...	...	...	...	...	...
Works for salt manufacture (Repairs) ...	30,218	0	1.2	31,575	0	1.3	12,167	0	0.5	5,176	0	0.2
Establishment ...	2,09,322	0	0.5	2,09,322	0	0.5	94,270	0	0.7	1,98,979	0	0.4
Contingencies ...	24,983	0	0.5	13,183	0	1.4	9,752	0	0.7	15,978	0	0.5
Police ...	2,08,931	0	4.9	1,09,567	0	11.5	96,746	0	6.9	1,33,353	0	4.5
Net miscellaneous ...	31,599	0	1.2	14,704	0	1.5	16,158	0	1.2	62,261	0	2.0
Works for storage and revenue purposes (Interest) ...	13,632	0	0.7	9,532	0	2.0	1,623	0	0.2	25,119	0	1.2
(Repairs) ...	14,617	0	0.7	8,472	0	2.0	2,832	0	0.2	12,908	0	1.2
Total ...	12,16,766	2	4.6	4,86,279	4	3.1	4,77,427	2	9.8	6,94,148	2	5.5
Sundry works for public convenience (Interest) ...	8,236	...	...	6,241	...	...	143	...	...	830	...	...
(Repairs) ...	11,451	...	...	13,757	...	...	250	...	...	11,919	...	...
Pasture land reserved ...	...	...	...	...	...	...	...	...	...	16,000	...	...
Total ...	13,697	0	0.5	19,998	0	2.1	393	...	...	28,743	0	0.9
Average period of storage ... Yrs.	1.0283	...	...	0.9899	...	...	0.9472	...	...	0.9489	...	...
Value of average receipts ... Rs.	1,01,486	...	...	37,163	...	...	39,413	...	...	73,026	...	...
Interest at 4 per cent ...	41,743	0	1	13,957	...	1.4	14,934	...	1.0	27,720	...	0.9
Total ...	12,78,225	2	6.1	5,20,234	4	0.6	4,92,756	2	10.8	9,50,618	2	7.3
General supervision at 3 pies per maund ...	0	3	...	0	3	...	0	3	...	0	3	...
Grand Total ...	2	6.1	...	4	9.6	...	3	1.8	...	2	10.3	...

APPENDIX D-1

of cost of salt per maund.

	NELLORE.			CHINGLEPUT.			SOUTH ARCOT.			TANJORE.			MADURA.			TINNEVELLY.		
	Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.		
...	64,47,522			123,32,671			32,13,395			69,47,594			32,79,757			50,27,875		
...	...			...			2,20,670			7,32,751			29,960			...		
...	72,630			7,709			4,883			51,292			19,585			36,990		
...	8,964			125			404			4			40			251		
...	65,29,116			1,63,60,505			34,39,354			77,31,551			33,29,342			50,65,216		
...	3,24,096			4,50,378			3,34,221			1,15,511			94,950			2,05,263		
...	1,03,343			5,17,480			120			2,59,440			16,888			25,095		
...	28,636			22,796			24,747			4,482			5,758			36,178		
...	...			...			...			...			...			...		
...	4,58,075			9,90,634			3,72,672			8,79,433			1,17,696			2,66,536		
...	60,71,041			153,69,851			30,66,682			73,52,113			32,11,646			47,98,620		
	Amount.			Amount.			Amount.			Amount.			Amount.			Amount.		
	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.	Rs.	As.	P.
...	450	0	0	1,910	0	0	4,850	0	0.3	2,170	0	0	160	0	0	5,450	0	0.2
...	5,49,025	1	5.4	15,91,333	1	7.8	3,23,959	1	8.3	6,57,017	1	5.2	3,12,914	1	6.7	4,50,448	1	6.0
...	...	...	...	...	...	...	47,144	0	3.0	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	54,199	0	3.5	3,050	0	0.0	6,766	0	0.5	1,560	0	0.1
...	16,393	0	0.5	2,15,795	0	0.7	10,533	0	0.0	13,023	0	0.5	21	0	0.1	1,750	0	0.2
...	2,52,264	0	8.2	4,27,399	0	5.3	1,37,713	0	8.6	2,46,251	0	6.5	1,37,269	0	8.2	1,43,847	0	5.8
...	26,000	0	0.9	30,355	0	0.4	10,288	0	0.6	26,563	0	0.7	15,826	0	1.0	15,583	0	0.7
...	2,52,590	0	8.0	4,09,023	0	5.1	1,45,078	0	9.1	2,12,164	0	5.6	1,03,238	0	6.1	69,016	0	2.7
...	35,363	0	1.1	6,72,163	0	8.5	93,738	0	5.9	82,510	0	2.2	14,615	0	0.9	27,773	0	1.1
...	10,549	0	0.8	53,157	0	1.1	10,050	0	1.8	43,530	0	2.2	1,644	0	0.8	14,728	0	1.0
...	13,825	0	0.8	37,169	0	1.1	18,891	0	1.8	41,649	0	2.2	10,423	0	0.8	9,851	0	1.0
...	11,63,501	3	0.9	31,99,553	2	7.7	8,05,344	4	2.5	13,31,646	2	10.3	5,97,672	2	1.18	7,42,641	2	5.7
...	2,742	...	...	4,678	...	...	2,770	...	...	6,150	...	...	1,410	...	...	7,812	...	...
...	14,632	...	...	4,196	...	...	1,981	...	...	8,009	...	...	5,211	...	...	12,903	...	...
...	17,434	0	0.6	8,874	0	0.1	4,751	0	0.3	14,150	0	0.4	6,621	0	0.3	20,720	0	0.9
...	1,0777	...	...	1,0190	...	...	8212	...	...	1,0356	...	...	9912	...	...	8884	...	...
...	99,968	...	...	2,85,282	...	...	67,430	...	...	1,05,536	...	...	47,297	...	...	64,607	...	...
...	40,077	0	1.3	1,16,372	0	1.5	22,149	0	1.4	43,710	0	1.2	18,751	0	1.1	22,959	0	0.9
...	12,31,012	3	2.8	36,24,799	3	9.3	8,32,244	4	4.2	13,89,806	3	0.5	6,23,044	3	1.2	7,35,320	2	7.5
...	...	3	...	...	0	3	...	0	3	...	0	3	...	0	3	...	0	3
...	3	5.8	...	4	0.3	...	4	7.2	...	3	3.5	...	3	4.2	...	2	10.5	...

APPENDIX D.

I.—Cost of Salt. B.—Statement showing the calculation

	EAST COAST.			MALABAR.			SOUTH					
							Home manufac- tured.			Imported.		
	Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.		
Quantity made or imported...	607,74,589			56,39,000			4,37,841			26,33,948		
Spontaneous salt ...	7,87,684			...			...			...		
From other districts...	...			59,274§			...			...		
Gain by weighment ...	2,03,329			6,539			...			...		
Miscellaneous ...	12,747			41			3,655			23,091		
Total	617,78,349			57,04,854			4,41,496			26,57,039		
Deduct wastage ...	22,62,855			38,491			28,421			34,206		
„ Discount—ordinary...	12,55,144			1,50,002			...			...		
„ Do. —special ...	1,25,319			...			...			...		
„ Wastage in transit ...	15,326			...			...			...		
Total	36,58,844			1,88,493			28,421			34,206		
Net quantity ...	581,19,505			55,16,361			4,13,075			26,22,833		
	Amount.			Per Maund.			Amount.			Per Maund.		
	Rs. As. P.			Rs. As. P.			Rs. As. P.			Rs. As. P.		
Land assessment ...	23,797 0 0·1			...			14,823 0 16·9			...		
Payment to manufacturers or importers ...	53,46,337 1 5·7			25,90,029 7 6·3			50,782 1 11·3			12,05,637 7 4·3		
Charge on salt received from other districts...	...			14,127 1 0·5			...			...		
Works for salt manufacture... { Interest	96,461 0 1·5			...			...			...		
Repairs ...	3,38,133 0 1·5			...			...			...		
Establishment ...	19,88,877 0 6·5			60,041 0 2·1			0 11·5			0 11·5		
Contingencies ...	1,86,211 0 0·6			5,323 0 0·2			0 0·7			0 0·7		
Police ...	17,32,708 0 5·8			7,413 0 0·2			0 7·1			0 7·1		
Net miscellaneous ...	10,77,884 0 3·5			62,767 0 2·2			0 0·5			0 0·5		
Works for storage and reve- { Interest	1,33,564 0 1·2			10,080 0 1·2			0 2·3			0 2·3		
nue purposes. { Repairs ...	1,70,679 0 1·2			24,846 0 1·2			...			...		
Total	111,56,652 3 0·9			27,77,696 8 0·8			4 4·5			9 2·6		
Sundry works and charges for { Interest	41,014 ...			...			...			...		
public conveniences. { Repairs ...	84,375 ...			...			...			...		
Total	1,41,389 0 0·5			...			0 0·1			0 0·1		
Average period of storage ... Yrs...	9,524 ...			1,03,16 ...			...			...		
Value of average receipts ... Rs...	9,14,190 ...			2,78,334 ...			...			...		
Interest at 4 per cent ...	3,62,374 0 1·2			1,15,182 0 4·0			0 3·7			0 3·7		
Total	110,60,415 3 2·6			28,92,373 8 4·8			4 6·3			9 6·4		
General supervision at 3 pies per maund...	0 3			0 3			0 3			0 3		
Grand Total	3 5·6			8 7·8			4 11·3			7 9·4		

APPENDIX D1

of cost of salt per maund.—Continued.

CANARA.									East Coast.						REMARKS.		
Both.			WEST COAST.			WHOLE PRESI- DENCY.			1869-70 to 1874-75			1874-75.					
Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.			Indian Maunds.		
30,71,789			57,10,789			694,85,378			286,10,037			50,53,873			*From Nellore.		
...			...			7,87,584			2,87,807			49,321			†Land reserved for		
...			59,274			...			...			...			Banjaras' cattle at		
26,746			32,371			2,35,700			24,913			7,953			Chinna Ganjam.		
			955			13,702			1,690			418			I. Mds.		
															‡From Kistna. 67,470		
30,98,535			88,03,389			703,22,464			289,24,447			51,02,565			" Chingle- put ...153,200		
															220,670		
62,627			1,01,118			23,65,973			11,32,942			2,19,598			§ From Chingleput.		
...			1,30,002			14,05,146			5,49,463			1,03,095					
...			...			1,25,319			27,017			5,502					
...			...			15,526			15,526			14,580					
62,627			2,51,129			33,00,964			17,24,948			3,44,775					
30,35,908			85,52,269			666,12,500			271,99,499			47,57,790					
Amount.			Per			Amount.			Per			Amount.			Per		
Rs.			Maund.			Rs.			Maund.			Rs.			Maund.		
14,823			0 0 9			14,823			0 0 3			15,700			0 0 1		
12,56,439			5 7 5			38,49,538			7 2 5			26,07,905			1 6 4		
...			...			14,127			0 0 3			...			...		
...			...			...			...			...			...		
...			...			...			...			...			...		
1,60,125			0 11 5			2,40,166			9 5 4			22,29,043			0 6 4		
10,567			0 0 7			15,890			0 0 3			2,02,101			0 0 6		
1,13,571			0 7 1			1,20,684			0 2 8			18,60,690			0 5 4		
8,636			0 0 5			71,408			0 1 6			11,43,287			0 3 3		
14,103			0 2 5			24,183			0 1 7			2,07,747			0 1 2		
25,469			...			50,315			...			2,20,994			0 1 2		
16,23,733			8 6 7			44,01,429			8 2 9			155,43,954			3 8 8		
831			...			831			...			41,845			...		
953			...			953			...			85,325			...		
...			...			...			...			16,000			...		
1,784			0 0 1			1,784			0 0 0			1,43,178			0 0 4		
1,0070			...			1,0247			...			9600			...		
1,47,737			...			4,26,071			...			1,34,026			...		
59,509			0 3 7			1,74,691			0 3 8			5,37,065			0 1 5		
16,85,025			8 10 5			45,77,904			8 6 7			162,24,192			3 10 7		
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III.—Statement showing retail prices, and estimated cost per pound of salt, at certain stations in the Madras Presidency.

Districts and Stations.	Revenue Board's Price Returns.					Bazaar specimen rates.	Source of supply.	Distance.	Cost including cartage.	Profits.	REMARKS.
	April 1875.	July 1875.	October 1875.	January 1876.	Average for the year.						
COAST DISTRICTS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.			RS. A. P.	RS. A. P.	
GANJAM.											
Ganjam	2 5 2	2 9 4	2 14 6	2 14 6	2 10 10	3 1 6	Salt Station	2	2 5 0	0 5 10	The rate of cartage in the district by carts is from 1 to 3 pies per mound per mile. The rates per cart load are stated in most cases. The cart load is taken at 11 mounds.
Ichapur	2 7 11	2 7 11	2 7 11	2 7 11	2 7 11		Ichapur	40	2 2 3 10	0 4 11	
Tekkali	2 1 4	2 1 4	2 1 4	2 1 4	2 1 4		Do.	12	2 1 0	0 0 4	
Narasimhapeta	2 1 7	2 1 7	2 1 7	2 1 7	2 1 7		Woneravilli	8	2 0 8	0 0 11	
Berhampore	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 9 6	Nowpada	62	2 5 0	2 4 6	The Board's quotations for Berhampore are doubtful. The profits here shown are struck on bazaar specimen rates.
Sompeta	2 5 4	2 5 4	2 1 11	2 1 11	2 3 8	2 5 2	Ichapur	15	2 2 0	0 3 2	
Purushottapur	2 14 7	2 5 4	2 9 6	2 5 4	2 8 8		Nowpada	60	2 5 0	...	
Chitrode	2 3 7	2 3 7	2 3 7	2 3 7	2 3 7	2 12 1	Ichapur	7	2 1 7	0 2 1	
Aska	2 12 11	2 12 11	2 12 11	2 10 3	2 12 3	2 5 3	Ganjam	18	2 5 6	0 4 2	
Parlakimidi	2 8 0	2 4 4	2 4 4	2 4 4	2 5 3	2 11 8	Kupilli	13	2 1 1	0 2 6	
Surada	2 11 6	2 11 6	2 8 11	2 5 8	2 3 8	2 4 4	Woneravilli	16	2 1 3	0 2 4	
Russalkonda	2 11 4	2 15 5	2 11 4	2 11 4	2 12 4	2 11 2	Nowpada	85	2 8 10	0 7 2	
Udayagiri						2 14 2	Do.	24	2 1 10	0 3 5	The Board's conversion of the Parlakimidi measure is uncertain and the return probably too low. But the Bazaar specimen rates are high.
VIZAGAPATAM.						2 11 8	Ganjam	56	2 9 4	0 1 4	
Vizagapatam	2 13 7	2 13 7	2 13 7	2 13 7	2 15 7	2 11 10	Nowpada	111	2 8 4	0 1 4	
Chitrapur	2 2 9	2 2 9	2 2 6	2 1 1	2 2 4	2 9 9	Ganjam	59	2 8 3	0 4 0	
Anakapalli	2 6 6	2 6 6	2 6 6	2 6 6	2 6 6	3 10 6	Nowpada	63	2 5 4	0 7 0	
Sarasiddi	2 5 6	2 5 6	2 5 6	2 5 6	2 5 6		Ichapur	139	3 1 9	0 5 9	In the Hill Malaha.
Narasapur	2 5 6	2 5 6	2 5 6	2 5 6	2 5 6	2 12 3	Nowpada	6	2 0 6	0 13 1	The rates per cart-load are given in most cases. The load is taken at 12 mounds. The rate is generally 1 pie per mound per mile.
Vizianagaram	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2	2 9 9	Do.	10	2 0 10	0 5 8	The measures in use at Parvatipur and Palconda are very small and uncertain. Salt however is undoubtedly cheap at these places, which receive large quantities from the works in Ganjam.
Gajapati nagaram	2 2 9	2 2 9	2 2 9	2 2 9	2 2 9	2 3 7	Bimalpatam	32	2 2 2	0 4 6	
Palconda	1 15 0	1 15 0	1 15 0	1 15 0	1 15 0	2 5 7	Kenada	40	2 2 2	0 3 10	
Parvatipur	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 15 11	Woneravilli	15	2 1 4	0 3 3	
Satur	2 5 10	2 10 6	2 10 6	2 2 0	2 7 3	2 15 9	Nowpada	24	2 2 8	...	
Vizavilli (Chodavanam)	2 5 7	2 5 7	2 5 7	2 2 9	2 4 10	2 12 7	Kenada	30	2 2 8	0 1 11	
Yelamanchili						2 8 6	Woneravilli	74	2 5 4	0 3 5	
Sungavaraipakota						4 1 3	Komada	46	2 3 10	0 2 3	
Malkangiri						4 1 3	Kupilli	60	2 5 0	0 2 3	
Gunupur						3 7 7	Palacheruvu	32	2 2 8	0 2 2	
						2 12 7	Do.	10	2 0 10	0 11 9	
						2 8 6	Karasa	28	2 2 4	0 6 2	
						4 1 3	Parvatipur	100	2 12 4	1 5 6	
						4 1 3	Satur	160	2 9 4	1 7 11	In the Jeypore hills.
						3 7 7	Nowpada	63	2 5 4	0 2 3	

[illegible]

Districts and Stations.	Revenue Board's Price Returns.					Bazaar specimen rates.	Source of supply.	Distance.	Cost including carriage.	Profits.	REMARKS.
					Average for the year.						
	April 1875.	July 1875.	October 1875.	January 1876.							
NELLORE.—											
Addanki	2 3 1	2 3 1	2 3 1	2 3 1	2 3 1	2 4 1	Chinna Ganjam	17	2 2 1	0 1 0	The cost of carriage is said to be 1 Rupee for 10 miles for a cart carrying 12 to 14 maunds, or 1½ pice per maund per mile. Salt is however often carried as a return load, or as a convenient freight; and the cost is overstated as the ordinary cart hire. The retail profits may be said to range from 1 to 4 annas a maund, which is not an excessive rate. There is no wholesale trade.
Qingole	2 3 1	2 3 1	2 3 1	2 3 1	2 3 1	2 6 2	Kanuparti	8	2 1 1	0 2 0	
Kandukur	2 3 1	2 3 1	2 3 1	2 3 1	2 3 1	2 5 1	Pakala	10	2 1 3	0 1 10	
Kavali	2 5 9	2 5 9	2 5 9	2 5 9	2 5 9	2 7 0	Tummalapenta	25	2 3 1	0 2 8	
Allur	2 5 9	2 5 9	2 5 9	2 5 9	2 5 9	2 5 7	Isakapalli	6	2 0 9	0 5 0	
Nellore	2 5 9	2 5 9	2 5 9	2 5 9	2 5 9	2 1 2	Krishnapatnam	43	2 0 6	0 5 3	
Gudur	2 5 9	2 5 9	2 5 9	2 5 9	2 5 9	2 6 9	Do.	15	2 1 10	0 3 11	
Polar	2 3 6	2 3 6	2 3 6	2 3 6	2 3 6	2 8 2	Tada	18	2 2 3	0 3 6	
Potluri	2 3 1	2 6 10	2 8 0	2 4 10	2 5 6	2 11 2	Kanuparti	7	2 0 10	0 2 8	
Darsi	2 6 4	2 6 4	2 6 4	2 6 4	2 6 4	2 8 6	Do.	37	2 4 7	0 1 1	
Kanigiri	2 6 10	2 6 10	2 6 10	2 6 10	2 6 10	2 8 1	Pakala	40	2 4 11	0 1 5	
Udayagiri	2 6 10	2 6 10	2 11 9	2 6 10	2 8 1	2 9 3	Isakapalli	55	2 6 10	0 1 3	
Atmakur	2 11 1	2 5 9	2 5 9	2 5 9	2 7 5	2 7 3	Do.	34	2 4 2	0 3 0	
Rapur	2 6 10	2 6 10	2 11 9	2 6 10	2 8 1	2 6 2	Krishnapatnam	45	2 5 7	0 2 6	
Venkatagiri	2 2 6	2 2 2	2 6 4	2 4 7	2 4 0	2 5 7	Do.	40	2 4 11	...	
Siharikota	...	...	...	...	...	2 7 3	Tada	10	2 1 3	0 6 0	
CHINGLEPUT.—											
Ponneri	2 2 5	2 2 5	2 2 5	2 2 5	2 2 5	2 4 4	Sunnepuzunta	15	2 1 3	0 1 2	The district is well supplied with roads. Numbers of carts bringing produce from all quarters take return loads from the Presidency town. Carriage cannot cost more than 1½ pice per maund per mile.
Svayyapett	2 2 5	2 2 5	2 2 5	2 2 5	2 2 5	...	Honne's Gardens	14	2 0 2	0 1 11	
Poonmalies	2 6 9	2 6 11	2 6 11	2 6 11	2 6 10	...	Madras	10	2 0 10	0 6 0	
Chingleput	2 0 6	2 2 1	2 0 6	2 0 6	2 0 11	...	Honne's Gardens	29	2 2 6	...	
Seipernatur	1 10 3	1 10 3	1 11 6	1 10 3	1 10 6	2 4 7	Chayur	27	2 1 10	...	
Tiruvellure	2 5 6	2 5 6	2 5 6	2 5 6	2 5 6	2 4 7	Madras	22	2 1 3	0 4 3	
Tripurpur	2 8 2	2 1 3	2 6 6	2 0 6	2 1 3	...	Railway Station	3	2 0 4	0 0 3	
Uramatur	2 13 10	2 13 10	2 13 10	2 13 10	2 13 10	2 10 2	Covelong	4	2 2 3	0 11 7	
Madurantakam	2 7 9	2 7 9	2 7 9	2 7 9	2 6 9	2 10 2	Chayur	57	2 2 3	0 11 7	
Conjevarum	1 12 8	1 14 8	1 12 1	1 12 1	1 12 10	2 7 6	Do.	18	2 1 1	0 5 8	
Satyavadu	2 10 4	2 10 4	2 10 4	2 10 4	2 10 4	2 14 9	Railway Station	...	2 2 3	0 7 4	The Conjevarum measure sent to the Board was 156 talahs; but it seems likely that the quoted prices are for Madras measures of 190 talahs. Salt is no doubt very cheap there, for the rail freight is only 2 annas 3 pice, and the rail-borne salt is undersold by that carried on carts. The price given by the bazaar specimen is probably correct.

SOUTH ARCADE.											
Cuddalore	2 5 5	2 1 10	1 14 11	2 4 6	2 2 8	2 7 11	Gundam	1	2 1 6	0 1 2	Carriage is taken for 1½ pice per maund mile. The South Arcot measures were very definite and the conversion is accurate. The price returns are so far trustworthy. The fall in the July quarter at some of the stations is suggestive of earth-salt; but the Collector states that it is not mixed with monopoly salt.
Chidambaram	2 9 10	2 8 8	2 7 6	2 7 6	2 8 4	2 5 5	Merkanam	22	2 3 0	0 5 7	
Chidambaram	2 11 11	2 1 6	2 3 0	2 5 0	2 4 7	...	Killai	7	2 0 11	0 3 3	
Porto Novo	2 10 7	2 0 0	2 1 6	2 2 9	2 3 8	2 3 9	Do.	3	2 0 5	0 6 3	
Tripurpur	2 7 6	2 7 6	2 6 5	2 5 5	2 6 9	2 3 7	Gundam	3	2 0 5	0 6 3	
Villupuram	2 12 5	2 9 10	2 8 8	2 7 6	2 9 7	2 3 7	Merkanam	42	2 3 3	0 4 4	
Trivadi	2 9 10	2 8 8	2 7 6	2 7 6	2 8 5	2 8 10	Gundam	19	2 2 5	0 6 0	
Trikalore	2 12 5	2 11 1	2 12 5	2 7 6	2 10 10	2 9 9	Do.	45	2 2 7	0 1 10	
Viduchalam	2 11 1	2 3 7	2 7 6	2 3 7	2 6 5	2 9 9	Do.	57	2 7 1	0 4 8	
Kallakurichi	2 12 5	2 12 5	2 12 5	2 9 10	2 11 9	2 8 1	Merkanam	59	2 2 7	0 2 5	
Tamomalai	2 12 5	2 11 1	2 8 8	2 6 5	2 9 8	2 10 6	Gundam	53	2 2 6	0 3 9	
Tittagudi	...	...	...	...	...	2 13 5	Merkanam	80	2 10 6	0 3 5	
Chengam	...	...	...	...	...	...	...	...	...	...	
TANJORE.											
Negapatnam	2 6 8	2 2 1	2 1 1	2 1 1	2 2 6	2 6 4	Negapatnam	...	0 9 0	1 9	The rates of cart hire are stated but the load is not given. It is taken at 14 maunds. The railway rate was 1 anna per ton per mile. The cart rates are from 1 to 1½ pice per maund per mile. Some Killai salt comes into Kunthakonan, Shiyali and Mayavaram.
Muttupeta	2 6 5	2 6 5	2 6 5	2 6 5	2 6 5	...	Tumbikamallavankottai	5	0 8 0	5 9	
Totipotai	2 7 2	2 10 1	2 10 1	2 10 1	2 9 5	...	Vedaranyam	4	0 8 0	8 7	
Trunavasal	2 4 7	2 4 7	2 4 7	2 4 7	2 4 2	2 7	Nettaval	3	0 8 0	3 9	
Trivallur	2 5 5	2 1 8	2 1 8	2 1 8	2 2 7	...	Railway Station	10	0 8 0	1 11	
Shiyali	2 9 2	2 9 2	2 9 2	2 9 2	2 9 2	2 9 2	Nettaval	18	1 0 0	1 9	
Nidanangalam	2 4 9	2 3 9	2 4 9	2 4 9	2 4 4	2 5 4	Killai	...	1 3 0	3 1	
Nanniam	2 7 3	2 9 10	2 4 10	2 4 7	2 6 2	2 7 11	Railway Station	8	1 10 0	3 6	
Tanjore	2 11 6	2 11 3	2 8 11	2 8 11	2 10 2	...	Trivallur Railway Station	0	3 3 3	3 3	
Trivadi	2 7 1	2 11 4	2 7 1	2 5 0	2 7 8	2 13 0	Tanjore	8	4 7 0	3 7	
Kunthakonan	2 4 7	2 8 0	2 7 4	2 7 4	2 6 10	2 4 7	Neechanagalam Railway Station	15	2 3 10	0 3 10	
Arundangi	2 4 7	2 8 0	2 7 4	2 7 4	2 6 10	2 4 7	Arundangi	21	2 2 4	0 4 6	
Pattukottai	2 3 9	2 5 10	2 3 9	2 5 1	2 4 7	2 7 5	Adampattam	8	2 1 0	3 7	
Mamargudi	2 4 9	2 8 2	2 5 10	2 5 10	2 6 2	2 6 5	Do.	20	2 2 0	4 0	
Tritrapundi	3 4 11	3 4 11	3 4 11	3 2 6	3 4 2	2 7 11	Vedaranyam	22	2 2 5	1 1 9	
Kodavasi	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 3	Trivallur Railway Station	12	2 2 3	0 4 10	
MADRAS.											
Ramnad	2 2 3	2 2 3	2 10 9	2 2 3	2 4 5	2 3 7	Attangudi	10	2 2 2	0 3 3	
Melur	2 2 6	2 8 7	2 11 9	2 5 3	2 8 1	2 7 9	Madura	17	2 5 11	0 2 2	
Madura	2 2 3	2 4 6	2 8 3	2 3 7	2 2 5	2 7 11	Tuticorin	100	2 2 6	0 2 7	
Trunavasal	2 5 0	2 6 6	2 12 6	2 6 0	2 7 5	2 8 2	Do.	88	2 2 1	0 2 11	
Trunavasal	2 7 1	2 8 11	2 9 2	2 7 1	2 8 1	2 9 2	Do.	139	2 2 0	0 3 1	
Dindigul	2 8 3	2 6 6	2 15 2	2 9 6	2 9 9	2 9 9	Annayyanayakkannur Railway Station	27	2 2 7	0 2 3	
Periyakulam	2 8 3	2 8 3	2 10 2	2 7 5	2 8 6	2 11 10	Dindigul	36	2 2 2	0 1 0	
Isan	...	...	...	...	...	2 5 10	...	...	...	...	
Trichudi	...	...	...	...	...	2 15 11	...	...	...	...	
Trappattur	...	...	...	...	...	...	...	...	...	...	
Shivaganga	...	...	...	...	...	2 7 0	...	...	...	...	

Districts and Stations	Revenue Board's Price Returns.				Bazaar specimen index.	Source of supply.	Distance Miles.	Cost including carriage.	Profits.	REMARKS.
	April 1875.	July 1875.	October 1875.	January 1876.	Average for the year.					
TAMIL NADU.										
Tuticorin	2 3 4	2 2 5	2 2 5	2 3 4	2 2 10	Salt Station	15	2 2 0	0 1 7	The load is said to be from 10 to 12 mounds and the rates of cart hire stated are from 1 pie on the Tuticorin, and Madhura road to 1 1/2 pie per mound per mile. Return carriage is commonly available; grain and cotton going in large quantities to Tuticorin.
Kulasekarpattanam	2 13 10	2 13 10	2 13 10	2 13 10	2 13 10	Collegal	15	2 2 0	0 10 10	
Tenkasi	2 9 3	2 9 3	2 9 3	2 9 3	2 9 3	Do.	15	2 2 0	0 8 7	
Vythikolam	2 9 3	2 9 3	2 9 3	2 9 3	2 9 3	Do.	10	2 1 5	0 8 6	
Tinnevely	2 8 1	2 8 1	2 8 1	2 8 1	2 8 1	Tuticorin and Arasadi	55	2 2 3	0 5 7	The rates of carriage given are by cart from 1 1/4 to 2 1/4 pies per mound per mile, and 3 pie by boat per mound per mile. The bazaar specimen rate for Kundapur is probably for Bombay salt; and the Board's rate for home manufactured salt. The cost of the latter has been entered.
Palmacottah	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Vizianpatti	26	2 2 3	0 5 0	
Nanguneri	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Arasadi	25	2 2 3	0 5 0	
Kallar	2 8 1	2 8 1	2 8 1	2 8 1	2 8 1	Tuticorin and Arasadi	53	2 2 3	0 5 0	
Sattur	2 8 1	2 8 1	2 8 1	2 8 1	2 8 1	Do.	60	2 2 3	0 5 0	The Hasnargi quotations must be incorrect.
Vivipattur	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Arasadi and Vaipar	75	2 2 3	0 5 0	
Warap	2 12 5	2 12 5	2 12 5	2 12 5	2 12 5	Tuticorin	70	2 2 3	0 5 0	
Ottapidram	2 11 0	2 11 0	2 11 0	2 11 0	2 11 0	Tuticorin and Arasadi	14	2 2 3	0 5 0	
Sankarantharkoyil	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Tuticorin	57	2 2 3	0 5 0	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Tenkasi	2 8 1	2 8 1	2 8 1	2 8 1	2 8 1	Collegal	60	2 2 3	0 5 0	
Arasamudram	2 9 3	2 9 3	2 9 3	2 9 3	2 9 3	Tuticorin	53	2 2 3	0 5 0	
Srivangundam	2 9 3	2 9 3	2 9 3	2 9 3	2 9 3	Collegal	10	2 2 3	0 5 0	
SOUTH CANARA.										
Mangalore	2 13 8	2 13 8	2 13 8	2 13 8	2 13 8	Salt Station	17	2 2 0	0 7 8	The rates of carriage given are by cart from 1 1/4 to 2 1/4 pies per mound per mile, and 3 pie by boat per mound per mile. The bazaar specimen rate for Kundapur is probably for Bombay salt; and the Board's rate for home manufactured salt. The cost of the latter has been entered.
Kundapur	2 14 5	2 14 5	2 14 5	2 14 5	2 14 5	Do.	17	2 2 0	0 7 8	
Bantwal	2 14 5	2 14 5	2 14 5	2 14 5	2 14 5	Do.	17	2 2 0	0 7 8	
Udupi	2 14 5	2 14 5	2 14 5	2 14 5	2 14 5	Do.	17	2 2 0	0 7 8	
Kasaragod	2 11 3	2 11 3	2 11 3	2 11 3	2 11 3	Kundapur	24	2 2 3	0 5 0	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Karkal	2 11 3	2 11 3	2 11 3	2 11 3	2 11 3	Salt Station	17	2 2 3	0 5 0	
Hosdurg	2 8 1	2 8 1	2 8 1	2 8 1	2 8 1	Mulki	17	2 2 3	0 5 0	
Hollangudi	2 5 1	2 5 1	2 5 1	2 5 1	2 5 1	Nilshwar	21	2 2 3	0 5 0	
Uparangudi	2 14 5	2 14 5	2 14 5	2 14 5	2 14 5	Bantwal	21	2 2 3	0 5 0	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Malabar.						Mangalore	32	2 2 3	0 5 0	
Calicut	2 12 5	2 12 5	2 12 5	2 12 5	2 12 5	Daman Salt	1	2 5 5	0 7 0	
Tellicherry	2 12 5	2 12 5	2 12 5	2 12 5	2 12 5	Tinnevely Salt	1	2 5 5	0 7 0	
Cananore	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Do.	1	2 5 5	0 7 0	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Pennari	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Do.	1	2 5 5	0 7 0	
Cochin	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Do.	1	2 5 5	0 7 0	
Manjeri	2 11 6	2 11 6	2 11 6	2 11 6	2 11 6	Do.	1	2 5 5	0 7 0	
Padangara	2 15 6	2 15 6	2 15 6	2 15 6	2 15 6	Payapur	25	2 2 3	0 5 0	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Perinthalmanna	2 15 6	2 15 6	2 15 6	2 15 6	2 15 6	Calicut	30	2 2 3	0 5 0	
Palghat	2 15 6	2 15 6	2 15 6	2 15 6	2 15 6	Pennari	51	2 2 3	0 5 0	
	2 15 6	2 15 6	2 15 6	2 15 6	2 15 6	Ponnay	74	2 2 3	0 5 0	

Districts and Stations	Revenue Board's Price Returns.				Bazaar specimen index.	Source of supply.	Distance Miles.	Cost including carriage.	Profits.	REMARKS.
	April 1875.	July 1875.	October 1875.	January 1876.	Average for the year.					
TAMIL NADU.										
Manantoddy	3 10 3	4 1 7	4 1 7	4 1 7	4 1 7	Cananore	60	5 4 2	0 5 0	The discount and credit system and the practice of sale by measure, enable the wholesale merchants to sell the salt to retailers at 2 Rupees a measured mound with a profit. Retail profit and carriage to bazaar come to 3 annas 1 pie.
Vythery	...	...	...	...	...	Tellicherry	72	3 2 7	0 5 8	
Gudalur	...	...	...	...	...	Do.	40	3 2 7	0 5 8	
Anjengo	...	...	...	...	...	Do.	83	3 2 7	0 5 8	
MADRAS.										
Bantshalls	2 3 1	2 3 1	2 3 1	2 3 1	2 3 1	Madras Calcutra	...	2 0 6	0 2 7	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Big Bazaar	2 3 1	2 3 1	2 3 1	2 3 1	2 3 1	Do.	...	2 0 6	0 2 7	
	...	...	...	...	...		...	...	...	
	...	...	...	...	...		...	...	...	
INLAND DIST.										
Tamilnadu.										
Trichinopoly	2 9 7	2 9 7	2 9 7	2 9 7	2 9 7	Railway Station	...	2 3 0	0 6 1	The reported cart hire is from 1 anna 4 pies to 2 annas a cart load. Taking the load at 14 mounds, show rates 1-1-10 and 1-7 pies per mound per mile. The rate assumed is 1 1/2 pie per mound per mile. Salt is brought from Bangalore to Collegal for 1 1/2 pie per mound per mile. Railborne salt from Negapatam and earthborne salt from South Arcot enters South Cananore from Caroor, and now also Tinnevely and Madhura salt brought by rail from Dindigul. The Coimbatore price must be incorrectly reported. The measures in the district are not very definitely ascertained, but the anomalies in the prices are more probably due to cheap conveyance by carts returning from the railway stations.
Kutitai	2 7 6	2 7 6	2 7 6	2 7 6	2 7 6	Do.	...	2 3 0	0 6 1	
Masuri	2 9 7	2 9 7	2 9 7	2 9 7	2 9 7	Trichinopoly	...	2 3 0	0 6 1	
Lagudi	2 11 1	2 11 1	2 11 1	2 11 1	2 11 1	Do.	...	2 3 0	0 6 1	
Manjeri	2 11 1	2 11 1	2 11 1	2 11 1	2 11 1	Do.	...	2 3 0	0 6 1	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Perambalur	2 11 1	2 11 1	2 11 1	2 11 1	2 11 1	Cuddalore	75	2 4 8	0 6 5	
Udayarpalayam	2 3 7	2 3 7	2 3 7	2 3 7	2 3 7	Do.	...	2 6 9	0 6 5	
Turaiyur	2 9 4	2 9 4	2 9 4	2 9 4	2 9 4	Neidavazal	40	2 5 0	0 2 10	
Kilapalur	2 15 5	2 15 5	2 15 5	2 15 5	2 15 5	Trichinopoly	32	2 7 0	0 6 1	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
	...	...	...	...	...	Do.	...	...	...	
	...	...	...	...	...		...	...	...	
	...	...	...	...	...		...	...	...	
COMBATORE.										
Coimbatore	3 3 4	3 3 4	3 3 4	3 3 4	3 3 4	Railway Station	...	2 6 1	0 13 3	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Erode	2 13 2	2 13 2	2 13 2	2 13 2	2 13 2	Do.	...	2 5 1	0 6 0	
Caroor	2 8 7	2 8 7	2 8 7	2 8 7	2 8 7	Do.	...	2 4 8	0 3 11	
Dharmapuri	2 9 11	2 9 11	2 9 11	2 9 11	2 9 11	Avenashi Station	30	2 8 6	0 3 11	
Udampalpetta	2 12 11	2 12 11	2 12 11	2 12 11	2 12 11	Pollachi	16	2 9 3	0 6 1	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Palladam	2 12 11	2 12 11	2 12 11	2 12 11	2 12 11	Avenashi	10	2 9 3	0 6 1	
Pollachi	2 12 11	2 12 11	2 12 11	2 12 11	2 12 11	Pothumuro	21	2 7 9	0 6 1	
Blavani	2 12 11	2 12 11	2 12 11	2 12 11	2 12 11	Perundurai Railway Station	8	2 6 7	0 6 1	
Satyanagaram	2 9 11	2 9 11	2 9 11	2 9 11	2 9 11	Bangalore	84	2 13 9	0 4 10	The retail prices of salt in this district are extremely high, and the rates of carriage cannot account for this. The bulk of the addition to the monopoly price is wholesale and retail profit. The bazaar specimen price is invariably lower than the Board's returns, which seems to show that the latter are too high. The Hasnargi quotations must be incorrect. The Palghat and Cochin measures are the only doubtful ones. There is a large wholesale trade in the district, and the salt passes through the hands of many middlemen. The South Canara returns also indicate a high rate of merchant's profits.
Collegal	3 5 7	3 5 7	3 5 7	3 5 7	3 5 7	Perundurai Railway Station	79	2 13 7	0 4 10	
	...	...	...	...	...		...	...	...	
	...	...	...	...	...		...	...	...	
NUTTAM.										
Ootacamund	3 10 0	3 10 0	3 10 0	3 10 0	3 10 0	Bombay Salt, West Coast	...	3 0 0	0 9 6	The cost of carriage is 7 annas per mound from Mettupalayam to Coonoor, and 10 annas to Ootacamund. The distances are 22 and 54 miles. Black or Bombay salt used also to come through the Wynad.
Coonoor	3 15 2	3 15 2	3 15 2	3 15 2	3 15 2	Madras Salt	...	2 13 6	0 15 6	
Zotargiri	3 12 0	3 12 0	3 12 0	3 12 0	3 12 0	...	...	2 13 6	0 11 9	
	...	...	...	...	...		...	...	...	

Districts and Stations.	Revenue Board's Price Returns.					Bazaar specimen rates.	Source of supply.	Distance.	Carriage.	Profits.	REMARKS.
	April 1875.	July 1875.	October 1875.	January 1876.	Average for the year.						
NORTH ARCOT.											
Arrot	2 3 7	2 3 4	2 1 7	2 1 7	2 2 2	2 4 4	Railway Station	6	Rs. A. P.	Rs. A. P.	The cartload is stated to be 13 maunds and the hire from 1 to 13 annas per mule = 3 to 1-4 pice per maund per mile.
Vellore	2 2 4	2 2 4	2 0 5	1 15	2 2 1	2 3 4	Do.	3	2 2 2	0 3 3	The Madras measure is uncertain and the conversion wrong.
Wallaja	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Arrot Station	3	2 2 2	0 3 3	
Arut	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	19	2 2 2	0 3 3	
Gudattam	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Railway Station	3	2 2 2	0 3 3	
Tirupattur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	3	2 2 2	0 3 3	
Narayanaswami	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Puttur Railway Station	3	2 2 2	0 3 3	
Polar	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Arrot Station	37	2 2 2	0 3 3	
Wandewash	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	37	2 2 2	0 3 3	Probably supplied more cheaply with cart carried salt from Conjevaram. The railway rate to Conjevaram was 1 anna per ton per mile, and cartmen undersell the rail-borne salt there.
Maderak	1 14	6 14	5 14	5 14	5 14	5 14	Sholingur Station	10	2 2 2	0 3 3	
Kolabastri	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Tripattur Station	14	2 2 2	0 3 3	
Chittur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Railway Station	16	2 2 2	0 3 3	
Chandragiri	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Vellore Station	13	2 2 2	0 3 3	
Kannur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Tripattur Station	1	2 2 2	0 3 3	
Palmur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Kannur Station	23	2 2 2	0 3 3	
Pungar	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Gudattam Station	43	2 2 2	0 3 3	
Venkateswara	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	29	2 2 2	0 3 3	
SALEM.											
Salem	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Suramangalam Station	35	2 2 2	0 3 3	The rate of carriage varies from less than 1 pice to 2 pice a maund per mile. The actual cost per cart or per bag is given by the Collector in most cases; but the real quantities are uncertain. The cart load is assumed at 14 maunds where not stated.
Tripattur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Railway Station	2	2 2 2	0 3 3	
Sankeyyeroog	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	17	2 2 2	0 3 3	
Vaniyambadi	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	17	2 2 2	0 3 3	
Wongalur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Suramangalam Station	11	2 2 2	0 3 3	
Rasipur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	11	2 2 2	0 3 3	
Harur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	11	2 2 2	0 3 3	
Tiedhango	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Morarur Station	8	2 2 2	0 3 3	
Paramati	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Sankeyyeroog Station	35	2 2 2	0 3 3	
Utangarai	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	53	2 2 2	0 3 3	
Donkenkottai	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Tripattur Station	16	2 2 2	0 3 3	
Pennaguram	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Krishnagiri	28	2 2 2	0 3 3	
Krishnagiri	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	18	2 2 2	0 3 3	
Dharampuri	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Tripattur Station	26	2 2 2	0 3 3	
Chosoor	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Do.	17	2 2 2	0 3 3	
Akkur	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Morarur Station	18	2 2 2	0 3 3	
Nannakkal	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Suramangalam Station	34	2 2 2	0 3 3	
Sheveroy Hills	2 2 8	2 2 4	2 4 6	2 4 6	2 5 6	2 5 4	Salem	31	2 2 2	0 3 3	
							Do.	12	2 2 2	0 3 3	Carriage from Salem costs seven annas for a bullock load up the glant.

Districts and Stations.	Revenue Board's Price Returns.					Bazaar specimen rates.	Source of supply.	Distance.	Carriage.	Profits.	REMARKS.
	April 1875.	July 1875.	October 1875.	January 1876.	Average for the year.						
GUDAPATI.											
Pallampett	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Rajampett Station	9	2 4 5	0 3 2	The rate of carriage is 1 Rupee per 10 miles for a load of 11 or 12 maunds, or about 13 pice per maund per mile.
Gudapat	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Railway Station	12	2 4 5	0 3 2	
Jammalamadugu	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Kondapuram Station	12	2 4 5	0 3 2	
Pullivenda	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Preddur	30	2 4 5	0 3 2	
Pochur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Kannapur Station	25	2 4 5	0 3 2	
Chitvel	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Vellore Station	51	2 4 5	0 3 2	
Kannapur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Reddipalli Station	37	2 4 5	0 3 2	
Preddur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Railway Station	9	2 4 5	0 3 2	
Siddharatham	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Yerraguntla Station	8	2 4 5	0 3 2	
Bavel	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Krishnapattam	75	2 4 5	0 3 2	* To Siddharatham and Bavel, Nellore salt is brought by Banjaras. The cost of carriage is taken at 3 pice per maund per mile, and this salt may account for the high price of the bazaar specimens. Railborne salt leaves a good profit according to the Board's returns.
Vasahard	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Wondimitta Station	14	2 4 5	0 3 2	
Kadiri	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Krishnapattam	83	2 4 5	0 3 2	
Rayachoti	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Gudattam Station	35	2 4 5	0 3 2	
Madanapalli	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Gudattam Station	66	2 4 5	0 3 2	
	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Wondimitta Station	67	2 4 5	0 3 2	
	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Preddur	23	2 4 5	0 3 2	
	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Pullivenda	40	2 4 5	0 3 2	
	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Rayachoti	30	2 4 5	0 3 2	
	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Rajampett Station	30	2 4 5	0 3 2	
	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Gudattam Station	54	2 4 5	0 3 2	
BELLARY.											
Gooty	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Railway Station	...	2 4 5	0 3 2	Carriage is taken at 1½ pice per maund per mile. The Bellary measures are uniform and the standard is well known.
Tadipatri	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	...	2 4 5	0 3 2	The Collector states that some salt from the West Coast finds its way into the western taluks, and salt from Bangalore to the southern. The prices quoted bear out this view. Havindagalli in the western taluk is about 160 miles from Coimbatore in North Canara; and salt thence could come to Havindagalli for 12 annas 6 pice. From Bellary it would cost 15 annas 3 pice by rail and road, 378 miles. The bazaar specimens 3-4-2 perhaps comes from Bellary. The southern taluks, Hindurur and Madakshira are distant from Bangalore respectively 70 and 70 miles; but from Gooty, the nearest station on the north-west line, 65 and 15 miles. They are on, or close to, the important line of traffic direct from Bangalore to Bellary.
Yaniganur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Bellary	22	2 4 5	0 3 2	
Rayachoti	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Railway Station	...	2 4 5	0 3 2	
Bellary	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	...	2 4 5	0 3 2	
Adoni	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	...	2 4 5	0 3 2	
Alur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Aspiri Station	9	2 4 5	0 3 2	
Gevakenda	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Vijapur Station	17	2 4 5	0 3 2	
Bellary	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	32	2 4 5	0 3 2	
Kudligi	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	41	2 4 5	0 3 2	
Hosoppet	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	37	2 4 5	0 3 2	
Havindagalli	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	73	2 4 5	0 3 2	
Harjambudi	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	68	2 4 5	0 3 2	
Anantapur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Gooty Station	31	2 4 5	0 3 2	
Dharmavaram	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	50	2 4 5	0 3 2	
Hindurur	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Do.	70	2 4 5	0 3 2	
Panacunda	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Bangalore	72	2 4 5	0 3 2	
Madakshira	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Gooty	76	2 4 5	0 3 2	
Kalyandurg	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Bangalore	44	2 4 5	0 3 2	
Bukkapattam	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Bellary	65	2 4 5	0 3 2	
Kanpli	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Gooty Station	80	2 4 5	0 3 2	
Siruguppa	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Bellary	26	2 4 5	0 3 2	
Ramandurg	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	2 2 7	Adoni	...	2 4 5	0 3 2	

* Cheyur Salt.

† Madras Salt.

‡ Nellore Salt.

Districts and Stations.	Revenue Board's Price Returns.					Bazaar specimens.	Source of supply.	Distance.	Cost including carriage.	Profits.	REMARKS.
	April 1872.	July 1875.	October 1875.	January 1876.	Average for the year.						
Kurnool.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.		Miles.	RS. A. P.	RS. A. P.	
Piyapalli	2 9 4	2 12 10	2 12 10	2 9 4	2 11 1	...	Goety Station	10	2 7 1	0 4 0	Cart hire is taken at 1 Rupee per 12 maunds per 10 miles or 1-6 pies per maund per mile.
Pattikonda	2 9 4	2 12 10	2 9 4	2 9 4	2 10 3	...	Aspri Station	13	2 7 5	0 2 10	
Kovilkunda	2 9 2	2 12 5	2 9 2	2 12 5	2 10 10	...	Kondapuram Station and Jammalanadurg	27	2 10 6	0 0 5	
Oek	2 7 6	2 10 3	2 9 2	2 12 5	2 12 6	...	Kayalcheruvu Station	20	2 8 7	0 3 5	
Sirwell	2 13 0	2 6 6	2 15 4	2 13 0	2 12 0	...	Yerraguntla Station and Proddatur	42	2 11 4	0 0 8	
Nandial	2 6 0	2 13 7	2 11 2	2 6 5	2 9 7	...	Sirwell	13	2 13 0	0 0 8	Nellore salt is probably brought from Cumbum, distant 35 miles, by the Nandicamma pass by return carts and bullock-ras from Ongole and Kottapalem. At half rate, it would cost at Nandial Rupees 27-0 and yield a profit of 2 annas 7 pies.
Kalva	3 0 3	3 3 3	2 11 2	2 13 7	2 15 1	...	Kanuparti	167	2 7 0	0 2 7	Salt by return cart from Goety at half rate would cost at Kurnool Rupees 29-7.
Ramalakota	3 0 3	3 6 2	2 13 7	2 13 7	2 14 11	...	Kurnool	16	2 11 9	0 3 4	
Kurnool	2 11 2	2 12 4	2 6 6	2 7 1	2 9 4	...	Goety Station	40	2 11 4	0 3 7	
Nandikotkur	...	2 13 7	2 6 9	2 7 1	2 9 2	...	Nandial	54	2 13 1	...	
Atrakur	2 6 6	3 3 3	2 11 2	2 13 7	2 11 1	...	Kurnool	39	2 9 8	...	
Markayur	2 7 6	2 12 5	2 13 5	2 12 5	2 10 8	...	Nandial	15	2 11 8	...	
Cumbum	2 7 6	2 7 6	2 7 6	2 7 6	2 7 6	...	Nandial	30	2 11 0	...	
						...	Cumbum	27	2 10 7	0 9 6	
						...	Kanuparti in Nellore	17	2 7 1	0 3 7	
						...	Chilana Ganjam in Kiefa	73	2 4 10	0 1 8	
						...		75	2 5 0	0 1 6	Salt is probably brought by return carts or bullock-ras to Cumbum from Ongole and Kottapalem at less than 1-6 pies per maund per mile. At half that rate it would cost Rupees 27-10 and would yield a fair profit. The low prices at Kurnool, and Nandial may be due to admixture with earth-salt. But in that case they ought to fall in July; but they show a rise. The cause is therefore more likely to be low rates for return carts. Goety to Kurnool, Cuddapah to Kurnool via Nandial, and Cumbum to Kurnool via Nandial are the chief lines of traffic in the district.

II. 2.—Statement shewing further bazaar prices.

Bazaar Specimens.				Salts purchased by a member of the Commission.	
Places.	Price per maund.	Places.	Price per maund.	Plans.	Price per maund.
	RS. A. P.		RS. A. P.		RS. A. P.
†Bhadrahalam	2 11 10	†Mayavaram	2 10 6	Madras (cleaned)	5 14 0
Do.	2 9 9	† Do.	2 6 7	„ (common)	3 6 10
†Pittapur	2 6 2	†Adrasapatam	2 7 11	Bamkudi	6 13 7
Polavaram	2 8 8	Adutori	2 11 10	Pari	3 6 10
†Tallapadi	3 1 3	Srivilliputtur	2 10 6	Kalingapatam	3 6 10
Tanuku	2 4 10	Sankaravakamarkovil	5 2 3	Chicacole	2 3 7
Sowringpore*	7 6 0	†Coimbatore	3 6 10	Vizagapatam	2 13 5
Gandavaram*	4 5 3	† Do.	3 2 8	Tuticorin	2 2 7
Palnad*	2 9 2	†Caroor	2 3 7	Do.	2 5 0
†Kanigiri	2 8 1	†Udumalpett	2 13 5	Madura	2 9 2
†Chingleput	2 6 4	†Dharapuram	2 15 8	Trichinopoly	3 2 3
Do.	2 5 10	Talavady*	4 11 7	Do.	3 4 8
†Sydapett	2 3 0	Collegal*	4 11 7	Tanjore	2 8 6
Do.	2 3 1	Pahanair*	4 13 2	Nagapatam	2 5 1
Do.	1 12 11	Do.	4 9 9	Ootacamund	4 0 3
Conjeveram*	1 12 4	†Anantapur	2 15 0	Do.	4 0 6
Chanampett	2 4 1	Tuticorin	2 8 6		
Ulundurpett	2 11 10				
Chillambam*	2 0 8				

* Rejected as unreliable.

† Came to hand too late.

II. 3.—Bazaar prices of Kurnool Earth-salt.

		RS. A. P.			RS. A. P.
Nandial	Best	0 9 8	Pattikonda	Best	0 13 10
	Worst	0 9 10		Average	0 10 11
Cumbum	Best	0 6 11		Worst	0 14 1
	Average	0 5 7		Best	0 15 3
	Worst	0 8 8	Kovilkuntla	Average	0 9 1
Rarulakota	Best	0 13 10		Worst	0 9 4
	Average	0 12 8		Best	0 13 7
	Worst	0 11 0	Nandikotkur	Average	0 13 8
				Worst	0 11 0

III. 1.—Statement shewing the declared destination of Salt sold for inland consumption.

Districts.	Declared for	Fasli 1280.	Fasli 1281.	Fasli 1282.	Fasli 1283.	Fasli 1284.	Average.
Ganjam.....	Vizagapatam.....	2,72,555	3,30,952	3,65,956	3,26,379	3,19,278	3,23,023
	Central Provinces.....	3,03,932	2,45,232	2,33,944	2,76,922	2,29,095	2,57,829
	Cattack.....	37,860	31,227	13,701	8,368	...	...
	Poorce.....	1,515	810	1,349	583	1,07,620	41,017
	Orissa Tributary Mahals.....	632	1,867	...	...	...	...
	Total...	6,16,074	6,10,088	6,14,953	6,12,252	6,55,993	6,21,872
Vizagapatam.....	Godavery.....	2,067	2,381	6,883	6,889	4,219	4,488
	Ganjam.....	4	13	...	7	...	5
	Total...	2,071	2,394	6,883	6,896	4,219	4,493
Godavery.....	Kistna.....	...	759	...	...	...	152
	Bhadrachellum.....	100	2,998	2,230	...	...	1,056
	Central Provinces.....	9,610	9,694	9,793	6,643	7,993	8,509
	Total...	9,710	13,451	11,933	6,643	7,993	9,827
Kistna.....	Godavery.....	9,382	9,878	6,597	8,556	3,002	7,483
	Nellore.....	3,635	2,051	1,447	509	1,842	1,897
	Kurshool.....	124	...	...	...	...	25
	Cuddapah.....	...	93	...	...	...	18
	Hyderabad.....	2,45,969	2,34,927	2,12,478	1,53,241	1,90,438	2,07,411
	Total...	2,59,110	2,46,949	2,20,522	1,52,306	1,95,282	2,16,834
Nellore.....	Kistna.....	26,568	21,275	29,995	35,612	...	35,887
	Cuddapah.....	12,168	12,834	19,618	34,056	...	19,668
	Kurnool.....	59,915	53,306	41,602	31,665	...	49,363
	North Arcot.....	22,076	29,183	30,969	40,647	...	30,729
	Madras.....	...	3,662	9,253	...	...	3,234
	Chingleput.....	19,818	10,882	5,575	14,383	...	12,665
	Bellary.....	242	712	...	239	...	298
	Hyderabad.....	1,89,704	2,55,788	2,16,517	1,97,998	...	2,19,752
	Total...	3,12,491	3,97,767	3,53,524	3,94,596	Not available.	3,64,593
South Arcot.....	Chingleput.....	699	1,328	3,442	1,986	301	1,539
	Trichinopoly.....	11,039	16,135	17,021	16,875	14,509	15,120
	Salem.....	66,629	97,675	1,11,328	65,122	16,969	71,523
	Tanjore.....	47	1,337	1,637	1,634	3,008	2,733
	North Arcot.....	3,766	11,727	19,315	15,146	1,378	9,966
	Coimbatore.....	...	1,563	128	487	...	435
	Madura.....	...	...	...	...	182	36
	Total...	82,131	1,29,765	1,46,771	1,01,250	42,317	1,00,453
Tanjore.....	Trichinopoly.....	2,28,728	3,21,220	2,62,221	2,88,546	2,82,183	2,76,530
	Salem.....	367	433	262	1,431	661	631
	Coimbatore.....	10,869	12,168	13,580	14,036	4,582	11,197
	Madura.....	29,080	23,958	35,983	35,043	10,083	27,235
	Chingleput.....	...	...	...	...	1	...
	South Arcot.....	...	...	481	...	262	149
	Total...	2,68,044	3,57,809	3,15,527	3,39,056	2,85,072	3,15,702
Madura.....	Tanjore.....	...	18	...	...	532	110
	Tinnevely.....	...	...	1,119	589	1	342
	Trichinopoly.....	...	...	...	...	8,788	1,756
	Salem.....	...	...	...	...	121	24
	Coimbatore.....	...	...	...	...	72	14
	Total...	...	18	1,119	589	9,514	2,248
Tinnevely.....	Madura.....	64,588	1,09,686	1,00,431	75,473	1,06,233	91,282
	Trichinopoly.....	...	11	73	...	...	13
	Coimbatore.....	...	...	...	...	93	18
	Total...	64,588	1,09,697	1,00,509	75,473	1,06,326	91,318
South Canara.....	Mysore.....	1,08,673	1,33,481	1,11,743	1,12,595	1,13,680	1,16,034
	Coorg.....	15,483	12,074	14,878	16,416	12,817	14,940
	Dharwar.....	69	774	65	193	199	260
	Total...	1,27,225	1,46,329	1,26,686	1,29,204	1,26,696	1,31,234
Malabar.....	Coimbatore.....	62,599	42,002	59,964	35,930	48,094	47,518
	Coorg.....	4,176	4,483	4,550	13,627	4,316	7,531
	Laccadives.....	687	573	564	1,227	287	667
	Mysore.....	72,719	95,476	84,236	82,114	81,177	83,144
	Total...	1,40,181	1,42,534	1,43,314	1,37,898	1,29,374	1,38,660

III. 2.—Statement shewing the exports of Salt from the Madras Terminus for ten years 1866—75.

Stations whither sent.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Tinnevely.....	...	...	...	...	...	...	1	...	...	...
Trichinopoly.....	500	467	525	567	507	534	676	545	237	246
Kadambattur.....	232	239	301	504	397	244	273	285	259	202
Chinnamangalpet.....	...	...	...	...	...	...	...	...	...	65
Arconam.....	952	969	1,141	1,132	881	642	592	649	733	691
Tritany.....	231	220	294	399	350	372	280	313	353	333
Nagzery.....	476	632	522	546	529	545	483	529	533	497
Pattur.....	349	313	334	490	410	379	315	310	343	374
Poodu.....	201	227	295	414	129	196	70	136	63	79
Triputy.....	617	540	529	876	829	452	333	215	195	182
Codoor.....	104	74	27	193	...	55	54	119	166	85
Reddipally.....	659	461	498	912	633	542	455	376	349	328
Rajampett.....	335	279	539	725	809	858	528	473	464	442
Nundalore.....	...	...	...	...	...	...	70	64	78	50
Wontimitta.....	18	...	...	...	...	36	42	27	...	...
Cuddapah.....	2,464	2,104	2,712	1,743	2,240	1,851	1,837	1,226	729	668
Camalipoor.....	...	...	...	...	...	9	...	...	...	...
Yerraguntla.....	86	74	269	566	423	281	202	143	37	24
Medanoor.....	244	553	834	236	125	44	53	...	10	...
Kondipuram.....	...	...	...	...	...	9	...	...	...	...
Tadipatri.....	...	...	500	962	396	214	174	198	95	58
Rayachervu.....	...	...	...	...	...	43	44	90	...	...
Gooty.....	...	...	...	463	2,213	1,399	810	1,058	465	306
Goondacul.....	...	...	...	...	26	27	...	...	...	...
Veerapoor.....	...	...	...	...	...	310	143	223	16	...
Bellary.....	...	...	...	...	...	119	174	357	152	358
Adoni.....	...	...	...	...	17	488	255	314	501	296
Kosge.....	...	...	...	...	17	...	...	...	10	63
Raichore.....	...	...	...	...	...	350	956	636	543	462
Sholinghur.....	993	510	806	899	696	969	422	340	530	294
Arcot.....	3,793	3,497	4,940	3,732	3,959	2,181	2,443	2,460	2,489	3,024
Trivallam.....	...	...	...	...	81	73	121	232	170	189
Vellore.....	6,345	5,623	7,099	6,515	6,543	5,221	7,826	7,581	6,951	7,179
Gorattam.....	946	663	633	980	1,022	1,032	719	596	748	587
Mailputty.....	987	416	493	378	327	281	281	303	283	188
Palani.....	531	353	365	532	513	274	280	243	254	296
Yanambady.....	1,465	1,793	1,645	1,068	1,133	879	840	959	631	609
Chozam.....	476	429	414	517	375	369	410	347	306	309
Polar Road.....	206	435	676	399	493	542	291	287	313	306
Mulloor.....	421	577	387	449	370	378	315	214	298	437
Cadapady.....	153	196	147	215	123	189	243	240	362	305
Bangalore.....	6,040	6,636	6,519	4,633	4,255	4,432	3,735	4,306	4,036	4,876
Tristore.....	1,383	1,382	1,261	989	1,294	1,102	1,033	1,453	1,836	2,365
Samulputti.....	...	...	...	...	...	38	...	...	...	25
Morapoor.....	1,114	1,074	1,287	959	722	525	335	776	1,264	1,392
Mullapooram.....	...	...	...	...	...	...	...	...	...	4
Sherwaroy Hills.....	...	...	...	...	...	8	...	17	...	...
Salem.....	3,178	3,459	3,128	1,719	1,380	1,895	1,675	2,981	2,920	5,191
McDonald's Choultry.....	...	...	...	...	...	54	70	127	79	242
Sankery Droog.....	1,818	2,167	2,198	2,723	3,263	2,517	1,783	1,565	1,624	1,627
Erode.....	2,927	2,271	3,755	3,551	3,718	3,678	3,243	3,721	3,157	2,906
Perandurad.....	...	...	...	...	...	10	...	...	...	176
Watkalli.....	...	32	...	41	...	18	...	...	...	117
Avenashy road.....	2,714	2,689	3,002	2,765	2,760	2,786	2,243	2,587	1,975	3,097
Somanore.....	12	...	...	...	...	...	...	...	...	7
Coimbatore.....	1,651	1,093	675	562	215	171	24	73	110	2,041
Karamady.....	...	...	...	...	...	...	...	...	9	164
Mettapollum.....	...	...	...	...	...	...	...	...	...	28
Conjeeode.....	...	...	...	...	...	...	...	...	...	8
Palghat.....	12	...	...	...	...	...	...	...	...	655
Parley.....	...	...	...	...	...	...	...	...	...	24
Lackady.....	...	...	...	...	6	...	...	...	...	25
Wootapollum.....	...	...	...	...	...	...	...	...	...	8
Conjeeveram.....	738	1,044	1,572	1,441	1,314	370	1,076	1,003	640	423
Caroor.....	...	...	...	110	...	...	...	...	...	53
Total...	43,903	43,595	48,591	45,820	44,893	38,880	38,135	40,655	37,431	44,565

III. 3.—Statement showing total Salt traffic on the Madras Railway since its opening.

Half year ending	Quantity, Tons.	Total for each year.	Half year ending	Quantity, Tons.	Total for each year.	Half year ending	Quantity, Tons.	Total for each year.
December 1856.	136	Tons.	June 1863.	19,760	Tons.	June 1869.	24,863	Tons.
June 1857.	1,429	...	December 1863.	20,672	...	December 1869.	26,032	50,895
December 1857.	3,085	4,514	June 1864.	26,723	...	June 1870.	25,321	...
June 1858.	5,187	...	December 1864.	27,397	54,120	December 1870.	24,601	49,934
December 1858.	4,317	9,704	June 1865.	22,312	...	June 1871.	22,279	...
June 1859.	5,856	...	December 1865.	23,041	45,353	December 1871.	22,099	44,378
December 1859.	6,759	12,725	June 1866.	23,220	...	June 1872.	21,695	...
June 1860.	8,337	...	December 1866.	26,309	49,529	December 1872.	21,538	43,283
December 1860.	10,696	19,633	June 1867.	24,696	...	June 1873.	23,712	...
June 1861.	11,355	...	December 1867.	23,845	48,541	December 1873.	23,101	46,812
December 1861.	13,031	24,686	June 1868.	25,061	...	June 1874.	20,376	...
June 1862.	14,174	...	December 1868.	23,293	53,354	December 1874.	22,676	43,052
December 1862.	17,923	32,607				June 1875.	22,371	...
						December 1875.	23,983	49,354

III. 4.—Statement showing the exports of Salt in maunds from principal stations on the South Indian Railway for two years, 1874 and 1875.

To	From Negapatam.		From Trichinopoly.		From Erode.	
	In 1874.	In 1875.	In 1874.	In 1875.	In 1874.	In 1875.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
Tanjore District.						
Negapatam.	221	...	...	...	...	...
Sevalore.	347	...	...	...	...	...
Trivalore.	15,439	21,280	50	...	...	...
Kulikery.	142	1,184	...	5	...	...
Koradachary.	497	878	...	...	...	...
Needamangalam.	6,882	7,866	...	...	...	...
Ammapetah.	151	76	...	...	...	...
Sattiamangalam.	627	363	...	...	...	...
Tanjore.	15,740	16,239	50	...	...	274
Boodalore.	...	...	...	...	...	...
Trichinopoly District.						
Tenaverkavore.	...	...	...	...	...	...
Trichinopoly.	1,14,210	1,17,720	...	...	...	...
Mananore.	...	...	...	...	...	...
Kulittalay.	5,840	1,039	2,504	3,325	...	...
Lalappettah.	6,408	2,696	3,160	4,326	138	...
Cuttalay.	...	3,462	234	238	...	...
Coimbatore District.						
Caroor.	53,234	49,458	2,340	2,587	2,092	50
Poogalore.	1,203	2,128	...	...	...	54
Codumudy.	22,965	18,253	646	...	768	...
Passoor.	5,285	4,394	...	...	107	...
Erode.	1,756	7,520	189	...	...	...
Total.	2,80,942	2,54,265	9,173	10,485	3,105	378
Madras Railway.	455	7,457	...	...	...	...
Grand Total.	2,81,397	2,61,722	9,173	10,485	3,105	378

To	From Negapatam.	From Trichinopoly.	From Erode.	Remarks.
	Maunds.	Maunds.	Maunds.	
Kolattur.	133	124	...	From 1st September 1875 to 31st December. These Stations are on the Madura extension.
Manarparai.	727	80	...	
Vaiyampatti.	...	...	...	
Aiyaloor.	...	...	...	
Vadamadura.	1,047	62	...	
Diandigul.	1,509	235	...	
Amayanaickanur.	12,321	1,194	...	
Sholavandan.	155	847	...	
Madura.	...	147	...	
	...	331	118	
Total.	15,892	3,020	118	

III. 5.—Statement showing the Salt traffic between district and district on the Madras Railway in Indian maunds for 3 official years.

1873-74.

From	Madras	Chingleput.	North Arcot.	Cuddapah.	Bellary.	Mysore.	Salem.	Coimbatore.	Malabar.	Bombay and Hyderabad.	Coimbatore.	Trichinopoly.	Tanjore.	Total.	Remarks.
To															
Chingleput.	42,107	...	...	...	...	...	...	...	...	...	...	...	...	42,107	
North Arcot.	3,66,276	...	...	...	...	...	...	...	...	...	...	...	...	3,66,276	
Cuddapah.	54,460	942	232	...	...	...	...	...	...	...	...	...	...	55,691	
Bellary.	52,260	...	409	2,809	...	...	...	...	...	...	...	...	...	54,978	
Bombay Presy.	...	...	...	...	365	...	...	...	...	...	...	...	...	365	To Sholapore.
Hyderabad.	20,557	...	...	843	...	...	...	...	...	...	...	...	...	21,400	
Central Provinces.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Mysore.	1,25,703	...	32	...	...	38	...	145	...	...	...	...	...	1,25,918	
Salem.	2,04,111	...	...	...	...	...	3,314	23	...	...	...	...	...	2,07,648	
Coimbatore.	1,19,371	...	...	...	...	...	154	24,663	53,143	...	...	...	...	2,27,334	
Malabar.	...	...	...	...	...	...	...	251	1,00,466	...	...	...	...	1,00,717	
Coimbatore.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Trichinopoly.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tanjore.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Madras.	...	...	...	...	...	3	...	...	...	...	...	...	...	3	
Total.	10,14,848	...	942	730	3,517	41	3,668	25,082	1,13,603	...	...	...	...	12,02,437	

1874-75.

Chingleput.	32,979	...	280	...	...	...	...	...	...	...	...	...	...	33,259	I. M.
North Arcot.	3,69,460	...	830	432	...	933	1	...	...	...	...	...	...	3,61,665	From Bombay ... 252
Cuddapah.	44,754	...	...	846	...	...	...	...	...	...	...	...	...	45,600	Callian ... 304
Bellary.	27,422	...	1,308	3,116	...	...	...	...	...	1,961	...	...	...	35,337	Sholapore 1,333
Bombay Presy.	...	...	...	43	234	...	...	...	...	...	...	...	...	427	Tadungam ... 31
Hyderabad.	11,433	...	1,111	420	...	...	...	...	...	...	...	...	...	14,966	Raichore ... 31
Central Provinces.	...	...	...	1204	...	...	...	...	...	...	...	...	...	294	
Mysore.	1,34,184	...	391	292	...	1,718	333	...	...	...	...	...	...	1,36,922	1,961
Salem.	2,40,703	...	379	...	...	2,3,999	25	...	...	...	...	...	...	2,49,781	To Sholapore.
Coimbatore.	1,46,745	...	240	...	...	...	513	28,161	96,390	...	...	...	...	2,24,692	To Nagpur.
Malabar.	...	...	...	...	...	...	...	3,766	94,573	...	...	...	...	98,901	
Coimbatore.	...	...	...	...	...	...	...	...	12	...	...	...	...	12	
Trichinopoly.	...	...	...	...	...	...	...	...	120	631	...	...	...	751	
Tanjore.	...	...	...	...	...	...	...	...	...	71	...	...	...	71	
Madras.	...	313	5	...	...	10	40	171	...	...	...	...	...	539	
Total.	9,96,686	313	2,057	4,312	6,034	2,693	4,856	32,318	1,41,678	1,961	35	1,241	7,327	12,91,565	

1875-76.

Chingleput.	19,810	...	435	...	...	...	...	...	...	...	...	...	...	20,245	
North Arcot.	3,69,748	...	2,128	1,697	...	...	...	...	...	...	...	...	...	3,73,573	
Cuddapah.	41,336	...	29	514	...	...	...	...	...	...	...	...	...	41,901	From Bombay 2 I.M.
Bellary.	28,106	...	463	1,424	533	...	24	...	...	...	...	...	...	30,560	Poonu 2 "
Bombay Presy.	...	...	...	125	1432	...	...	...	...	...	...	...	...	457	To Sholapore.
Hyderabad.	12,053	...	1,816	9,380	...	...	...	...	...	...	...	...	...	22,742	Of this, 7,993 mds. to Secunderabad.
Central Provinces.	...	...	...	3307	...	...	...	...	...	...	...	...	...	307	
Mysore.	1,54,585	...	27	3,333	591	225	722	...	...	...	...	...	...	1,59,383	To Nagpur 274 I.M.
Salem.	3,33,416	...	431	20	...	...	1,646	...	...	...	...	...	...	337	Omravotee 33 "
Coimbatore.	2,53,023	...	282	50	...	...	368	13,379	9,958	...	...	...	2,340	2,79,594	
Malabar.	26,627	...	12	...	...	...	...	240	52,498	...	...	...	...	79,377	
Coimbatore.	2,147	...	...	...	...	...	...	...	...	...	...	...	...	2,147	
Trichinopoly.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tanjore.	...	...	...	...	...	30	...	...	6	...	...	...	...	36	
Madras.	...	96	...	...	...	24	...	7	5	...	...	...	...	132	
Total.	12,10,851	...	3,467	8,714	11,242	302	2,760	13,820	62,467	11	...	...	2,677	13,16,311	

III. 6.—Statement showing the traffic between district and district on the South Indian Railway in manuds for three Calendar years, 1873—75.

1873.

To	From Tanjore.	From Trichinopoly.	From Coimbatore.	From Madras.	From Madras Railway.	Total.
Tanjore	46,963	128	93	...	17	47,241
Trichinopoly	1,60,657	5,275	811	...	331	1,67,074
Coimbatore	1,18,898	3,338	10,199	...	45	1,32,479
Madras	...	...	...	...	...	...
Madras Railway	...	...	...	...	...	...
Total...	2,66,568	3,741	11,103	...	435	2,81,847

1874.

Tanjore	40,268	597	...	...	229	41,094
Trichinopoly	1,27,485	6,093	727	...	1,483	1,35,790
Coimbatore	1,14,707	4,060	4,712	...	322	1,23,801
Madras	...	...	...	...	...	...
Madras Railway	455	...	...	...	...	455
Total...	2,82,803	10,750	5,439	...	2,036	3,01,028

1875.

Tanjore	48,978	452	472	274	46	49,822
Trichinopoly	1,26,292	8,216	193	...	522	1,35,223
Coimbatore	91,755	5,141	1,895	...	1,163	99,844
Madras	15,623	2,816	118	1,222	...	19,682
Madras Railway	7,563	445	362	218	...	8,588
Total...	2,79,214	17,065	2,920	1,714	1,731	3,02,644

III. 7.—Statement showing the destination of salt exported by sea on private account, from the Madras Presidency, for twenty years ending Fash 1284 (1874-5).

Fash year.	To Calcutta.	To Chittagong.	To the Malay Coast and Straits Settlements.	To Sumatra.	To Ceylon.	To Travancore.	To Madras Districts on the West Coast.	To Ceylon.	To Rangoon.	To Maldives.	To Balasore.	Destination not ascertained.	Total.
	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.	I. Mds.
1265	2,37,743	1,58,260	31,670	1,800	...	...	...	...	...	...	...	...	4,29,473
1266	3,04,495	1,50,485	22,960	...	...	...	...	...	...	...	...	...	5,07,940
1267	1,52,113	...	37,560	...	...	...	...	...	...	...	...	...	1,89,673
1268	3,46,604	...	91,900	660	57,840	16,680	19,669	...	...	...	...	...	5,33,293
1269	3,87,630	...	...	...	...	...	1,500	...	...	...	...	...	3,89,430
1270	2,77,027	...	14,400	...	...	...	...	15,848	...	...	...	...	3,07,275
1271	2,93,311	...	65,102	...	...	...	...	...	...	...	...	...	3,58,413
1272	2,63,858	...	50,830	...	...	39,600	...	...	...	...	...	6,360	3,60,768
1273	2,41,577	...	24,240	...	...	31,800	...	...	...	...	...	...	3,37,617
1274	11,086	...	25,200	...	...	2,47,190	...	...	...	...	...	2,09,379	4,93,655
1275	6,66,732	2,28,310	68,810	...	...	3,91,260	...	...	5,500	...	...	...	13,69,142
1276	1,45,038	72,727	96,603	...	...	13,200	...	5,580	15,942	1,200	33,200	...	3,83,870
1277	86,432	25,551	1,06,200	1,410	...	...	...	5,280	10,925	...	...	...	1,55,828
1278	2,31,490	17,200	57,240	4,440	10,940	...	2,660	6,180	...	...	...	...	3,30,470
1279	3,36,250	5,400	90,360	...	...	...	...	...	...	...	...	...	4,32,610
1280	2,49,266	...	78,480	6,120	...	...	...	...	...	...	...	...	3,33,860
1281	1,76,340	10,192	2,07,720	8,640	...	...	...	4,440	...	...	...	...	4,04,232
1282	1,99,788	21,000	61,650	8,600	...	...	...	...	...	...	...	...	2,86,038
1283	3,21,856	...	35,700	...	...	...	...	...	...	...	...	...	3,57,556
1284	2,77,025	...	37,200	...	1,14,000	2,36,617	...	...	...	...	...	...	6,64,912
Total	32,55,735	7,27,625	12,02,805	23,640	68,780	8,53,730	2,60,766	37,528	32,347	1,200	33,200	2,15,939	87,14,395

* This quantity was exported on account of the monopoly in Malabar.

APPENDIX E.

In this appendix we have inserted several miscellaneous papers to which reference is made in the report, but which do not fall under any of the specific heads treated of in the other Appendices.

No. 1.

A letter from Mr. F. F. HANDLEY, Covenanted Deputy Collector in charge of the Pooree District, No. 60, dated 14th April 1876.

I have the honor to submit the following answers to the questions asked by you in your letter without number, dated 15th February, 1876. The quotations in this report are from a letter received from the District Superintendent of police.

1st.—Are people living near the Chilka Lake, or in other parts of the district, allowed to make salt (pangá or karkach), for their own consumption without tax? If so, what limits are placed on such manufacture? Under what orders, and from what date has it been allowed? Is the permission general, or must special permission be asked and obtained in each case?

Answer.—It is evident that people living around the Chilka Lake and along the coast up to the mouth of the Devi river, and along the banks of that river, do make pangá salt for their own consumption, probably in small quantities at a time. The manufacture of karkach would require some little time, and it is made in open fields which would at once attract the attention of the police. The District Superintendent of Police reports on this question that, "people are not arrested for making small quantities of karkach or pangá salt for their own consumption. If they are seen taking away brine or salt earth, they are made to throw it away." The District Superintendent further states that "a few years ago the courts refused to punish any of these poor people sent up." From this the inference is that the police have refrained from chastising such offenders. No such orders can be found in the salt office, nor in the Magistrate's, nor District Superintendent's office. The number of prosecutions will be seen in answer to question 6. I would mention that the District Superintendent states that this manufacture by people for their own wants only takes place round the Chilka, but from the fact that there is a pangá manufactory at Astrang, and that some cases used to be sent up for prosecution formerly, I am of opinion that pangá was manufactured in small quantities. I do not think that it is illicitly manufactured to such an extent now, because there is a large pangá manufactory there, and the contractor looks very sharply after illicit manufacture. No limits have been placed on this illicit manufacture. The District Superintendent writes, "the permission is general in the salt tracts" and it is probable that the people had taken advantage of the natural supply and that no one had interfered with them. No orders have been passed on the subject so far as can be traced in the office. Certainly special permission in each case is never asked.

2nd.—What arrangements are made for preventing unlicensed manufacture round the Chilka Lake, and in other saliferous tracts in the district? Please give a list of the outposts maintained round the Chilka for salt preventive duties, with the strength and pay of the force employed at each, and the distances between the outposts, and describe the mode in which preventive work is carried on. Please state whether the men also perform ordinary police duties, and whether the salt contractors contribute any portion of their pay, and whether Nalbana and other mud islands in the Chilka are patrolled?

Answer.—(a) "To prevent unlicensed manufacture of salt around the Chilka there is a force of:—

- 1 Inspector,
- 2 Sub-Inspectors,
- 11 Head Constables,
- 46 Constables,

"posted at eleven outposts surrounding the lake, varying from three to twelve miles apart. The three superior officers are each provided with a boat. There are also two other boats with large crews enrolled under Act V of 1861. One is for general patrol all round the lake, the other is for patrol, and also for the accommodation of European officers visiting the salt tracts and police posts. Village Chaukidars also patrol within their own villages. In the eastern part of the district, in the Gope Thanah, a force of two head constables and eight constables is kept up at two outposts in the vicinity of the old manufacturing arangs, and a patrol boat with a large crew for the rivers.

"For convenience of reference the questions referred to are printed in italics opposite to the Deputy Collector's replies.

(3.) "The list of outposts on the Chilka, with cost, &c. is attached, (statement No. 1.) I may here mention that the salt preventive police is not separated from the regular Police, they have for years now been amalgamated, and though I have given Rupees 6 as the pay of constables there are many drawing Rupees 7 and 8; and head constables drawing up to Rupees 20. Very little difference exists between the salt outposts and regular police outposts, and constables are transferred from one to the other as is convenient. In fact every station and outpost in the district is a preventive salt post, and all are taught to consider it one of their chief duties. To each outpost around the Chilka is attached a certain number of villages, where village chaukidars and constables of the outposts daily patrol. There are no regular boats, but during the day, and frequently at night, constables patrol about within their jurisdiction, so that the whole salt tracts are under supervision and any one manufacturing illicitly, except in very minute quantities, would be at once detected. The boats are also constantly moving about, and added to all this, during the actual manufacturing season large preventive guards are enlisted at the expense of each licensee. All the salt police have to perform ordinary police duties as well. The salt contractors only pay for the preventive guard enlisted on the arang, they have a license to manufacture on during the manufacturing season, generally not exceeding three months in all.

"Head Constables receive Rs. 10.
"Constables, " 6.
"Contingencies @ 2 per cent.

"Nalbana Island is not patrolled. Salt could not be manufactured there, and if it could be, it would be at once detected by the patrol boats, and salt could not easily be landed on the other shores without detection. There are no other islands of this kind on the Chilka within the Pooree District, except one or two which are yearly manufactured on under license."

3rd.—Is any European Officer employed on patrol duty round the Lake, or at the salt works during the manufacturing season? Does the Superintendent of police visit the works during the manufacturing season, and if so, how often, and for what periods does he usually remain at the works?

Answer.—(a) "No European officer is employed on patrol duty at any time during the year, but the District Superintendent of police visits the arangs constantly during the manufacturing season, and could do more so if he had greater facilities of travelling; his stay is generally of a week's duration at a time, sometimes longer."

The following will shew how often and how long were the salt tracts actually visited by the District Superintendent of police during the manufacturing season of each of the last three years:—

In 1873-74.....four times for forty-one days.
" 1874-75.....four times for nineteen days.
" 1875-76.....six times for eighteen days.

4th.—Are there any places in the district at which salt is spontaneously generated? If so, please give a list of them, and state what precautions are taken to prevent the collection and removal of salt at and from them. Are the people permitted to take salt from them for their own consumption, and if so, what quantities may be taken, and under what orders is the practice allowed?

Answer.—"The only place where salt is spontaneously generated is in the jurisdiction of Lubbah, but the quantities are so very small that no actual precautions are taken. The Police sometimes prevent villagers carrying it away, but there is positively no prohibition. The people are allowed to take this salt for their own consumption, and I know of no order by which they could be legally prevented. The inhabitants are miserably

poor, and the quantities for them to collect so small that legal interference would be almost absurd except to prevent their collecting it in large quantities for sale or barter, but this is never done."

The jurisdiction of Lubbah covers the whole of the south from Priaghi up to Manikpatna. It was formerly a thanah, but was abolished in or about 1869, and made an outpost of Pooree thanah. There is no doubt that salt is spontaneously generated along the whole of the coast from Priaghi to Manikpatna in the hot weather. The District Superintendent says no precautions are taken to prevent the gathering and storing of this salt for private consumption. Of course it is taken in small quantities, but it is evident if the whole of the people of these parts provide their own salt, that alone would make some difference in the consumption of the District. But further it is a very difficult thing to decide how much salt may be taken for private consumption, and it would require constant supervision and vigilance on the part of the police to prevent people taking more than they required and subsequently selling it. As was said in answer to question 1, there appears to have been no definite orders as to the limits to be placed on this illicit manufacture, and abuses have probably crept in gradually. On the other hand, although no positive orders have ever been issued, and the matter appears to have drifted

on till now, at the same time the police, (since the abolition of the Government monopoly and breaking up of the former special salt establishments), have mixed up their general and salt duties, at the expense of the latter.

5th.—Is salt-earth collected anywhere in the district, and is it used for fish-curing or other purposes? Does it exist in large quantities, and is its collection regulated or restricted in any way?

Answer.—Salt-earth is used for fish-curing at Lubbah, Goorbal, Satlpara, and Bhuisandpur. Salt-earth does not exist in large quantities except near Lubbah and Bhuisandpur. Its collection is not regulated or restricted in any way. Sometimes the police

"make persons throw away what they meet them carrying, but this is not authorized."

6th.—How many prosecutions for illicit manufacture of salt have been instituted in the district in each of the last five years? Were such prosecutions more frequent previously? What orders, if any, have been issued to the police requiring them to refrain in certain cases from prosecuting persons found making salt without license?

Answer.—(a.) The prosecutions for illicit manufacture of salt in each of the last five years in this district were as follows:—

In 1870-71.....Nil.
" 1871-72.....9 cases.
" 1872-73.....7 cases.
" 1873-74.....1 case.
" 1874-75.....6 cases.

(b.) It will be seen from the figures noted below* that cases for illicit manufacture of salt were more frequent during the years 1864-65, to 1867-68. Previous to 1864-65 such cases were very few.

(c.) No order requiring the police to refrain from prosecuting persons for making salt without license seems to have been received in, or issued from, this office. With reference to this question the District Superintendent says:—"the only order I can find on the subject of not prosecuting persons making small quantities of salt for personal consumption, without license, is a vernacular one issued by a District Superintendent who was in charge of this office in 1872."

7th.—Please state in detail what was the strength and cost of the establishments employed to guard the salt works during the last five years of the monopoly system, and in each of the years 1872-73, 1873-74, 1874-75. Were any European Officers, or European or Native Inspectors, especially employed to supervise manufacture or sales under the monopoly system?

Answer.—(a.) I submit herewith a statement, (statement No. 2), shewing the strength and cost of the establishments employed to guard the salt works during the last five years of the monopoly system. These establishments also used to supervise sales of salt and to look after illicit manufacture of salt, &c., &c., &c."

(b.) I enclose a statement, (statement No. 3), shewing the preventive establishments employed in each of the years 1872-73, 73-74, and 74-75.

(c.) The assistant salt agent used to travel always in the salt arangs and sale chaukis of the district, and two native inspectors on Rupees 50 each, with an establishment of three barkandazes on Rupees 6 each, were specially employed during the monopoly system to supervise manufacture and sales of salt and to prevent illicit manufacture. There is no doubt the chief duties of this establishment were to prevent illicit manufacture.

8th.—What are the checks imposed on the receipt and issue of salt by darogahs? Please describe the procedure under which salt is brought from the works to the stores, and weighed in and stored, and delivered out to purchasers, with the checks, if any, imposed at each step.

Answer.—"When a sufficient quantity of salt is ready for transit from the salt manufacturing beds, it is loaded in carts, the pass officer remains at some convenient spot on the road by which all carts pass, and as each cart or batch of carts arrive, sees it *aduled*, (stamped), by the contractor's chapadar, and after inspection writes in his pass book, which contains cheques in triplicate, the amount of salt he believes is in the batch; a copy of this is given to the carters and a copy he sends at the end of the day by post to the Collector. If the route taken by the carters passes by any of the sentries of the preventive guard and can be seen, which is generally the case, all the way to the gola, no constable accompanies, but if otherwise, a constable of the preventive guard goes with the carts to the gola. On arrival at the precincts of the gola, the gola darogah receives the pass brought by the carters, examines the salt to see the *adul* marks are perfect, and then on the back of the pass,

* In 1853-54	1 case.	In 1859-60	3 cases.	In 1865-66	57 cases.
1854-55	Nil.	1860-61	Nil.	1866-67	5 do.
1855-56	Nil.	1861-62	Nil.	1867-68	52 do.
1856-57	1 case.	1862-63	4 cases.	1868-69	9 do.
1857-58	Nil.	1863-64	Nil.	1869-70	13 do.
1858-59	Nil.	1864-65	70 cases.		

"writes that he considers the amount correct, (or otherwise), and after signing it, at the end of the day despatches it by post to the Collector. The salt without weighment remains in large heaps round the gola for weeks, when each patadar, (the sirdar of a batch of malangis), carries his salt in baskets from the heaps to the scales where it is weighed, maund by maund, and thrown into the gola. The weighments take place in the presence of the gola darogah, the licensee, or his representative, a malangi, an agent of the landholder, and a police officer. The police officer keeps no regular account, but merely watches that the weighments are fair and that each maund is noted down. At the close of the day, he reports in his diary to the District Superintendent the amount weighed in that day. The rest all sit round the scales and with small heaps of salt in front of them, mark each maund and five maunds, noting them on paper afterwards. After a patadar's heap is finished the licensee's agent writes on the agreeable paper, (which he gave to the malangi before the manufacture commenced), the amount weighed in. The gola darogah, after entering the amount weighed in each day in his books, reports to the Collector. When the gola is full, (and also each day when weighment into the gola is not going on), each door is secured by three padlocks, the key of one, being kept by the nearest police officer, another by the darogah, and the third by the licensee. After permission is obtained from the Board of Revenue through the usual course, the gola can be opened for sale. On a merchant presenting a ravanah at the gola, the doors are opened by the above three persons, and the salt weighed out again, maund by maund, in the presence of these three and the merchant inside the gola, and carried away in carts or boats to the place of destination, after being adulad all over. There are several police out-posts both by every land and water route which they cannot help passing by. As the salt boats go by, they are therefore inspected over and over again by the police. The Collector sends the District Superintendent a memorandum of each ravanah he grants, copy of which is sent to the Salt Inspector, and if the destination of the salt is within this district, a copy is also sent to the nearest police station or outpost for the information of those officers, who often go and see it weighed or measured out on its arrival at the purchaser's godown. When the merchant has sold all his salt he delivers up his ravanah to the nearest police post, whence it is afterwards forwarded to the Collector. This is the line of manufacture up to the actual retail sales. The salt is well watched. The only objections I have to the whole system are the following:

"firstly—the employment of the regular police as preventive guards, taking them away from their police duties, and substituting untrained and almost useless men in their places during the manufacturing season;—

"secondly—the mode of weighing each separate maund in and out of the golas;—

"thirdly—the uncertainty of wastage and the pressure put on the licensees on this account, for which reason, to cover all possible losses, they add two annas per maund on to the sale price;—

"fourthly—the custom of allowing salt to remain so long at the thoras, (salt pans), before it is carted to the precincts of the golas, and then allowing it to remain there for weeks before it is weighed into the gola;—

"fifthly—the practice of weighing salt inside the golas almost in darkness."

9th.—Please state whether facilities exist for salt-making, (karkach or pangat), on the banks of the Sur Lake, or at the north-east corner of the district, in the neighbourhood of the delta of the Devi river, whether natural salt or salt-earth forms there, and whether the people are allowed to make salt for their own consumption without tax, and describe the preventive arrangements enforced there, and the strength and cost of the establishments employed.

"preventive arrangements are the same as for the Chilka, and with the following outposts and force:—

"Talgaon outpost.....	1 Head Constable, 4 Constables.
"Astrang outpost.....	1 Head Constable, 4 Constables.
"Devi patrol boat.....	1 Head Constable, 2 Constables, 1 Sirdar Manjhi, 4 Manjis.

Answer.—"No salt ever has or can be manufactured on the banks of the Sur Lake. The water here is scarcely brackish and nearly all dries up in the hot weather. The land is chiefly used for cultivation. Pangat salt is yearly manufactured under license in the neighbourhood of the Devi river, under much the same system of guards as at the Chilka. Salt-earth forms in some of these parts, but the people in Gope thanah are not allowed to make salt for their own consumption. The

"The panga salt manufacture under license in these parts, known as the Uttar and Dakhin Astrang, goes on night and day."

This is a large tract of country and though the preventive establishment and the contractors keep a sharp look out it is evident that panga salt can be made illicitly very easily if the people are so disposed. They have simply to gather some earth, mix it with water, and boil it down and make salt. The following is a list of prosecutions for illicit manufacture of salt from Gope during the last ten years:—

In 1865-66.....	4	In 1871-72.....	3
" 1866-67.....	6	" 1872-73.....	2
" 1867-68.....	4	" 1873-74.....	1
" 1868-69.....	7	" 1874-75.....	6
" 1869-70.....	4	" 1875-76.....	0
" 1870-71.....	0		

10th.—Are the contractors required to pay the cost of Government establishments at their works and stores in advance, or month by month, or after the salt is sold? Are advances made by Government to the contractors, and if so, at what rates and under what conditions?

Answer.—(a) Under the provisions of rules 5 and 9, at pages 3, and 5, of the Salt Manual respectively, the contractors are required to pay the cost of Government establishments employed both at their works and stores and the salaries of such establishments are deposited in advance month by month.

(b) No advance is made by Government to the contractors on any conditions.

11th.—I understand that wastage up to 21 per cent. is admitted on salt stored, and that if, when a store is cleared, the wastage is found to exceed that limit the contractor is liable to pay duty on the excess. Please give any information that you may have as to whether the wastage has ever been found to exceed 21 per cent., and state whether the contractors' liability to pay duty on the excess has been enforced.

Answer.—Under the provisions of rule 21, page 6 of the Salt Manual, the authorized allowance of wastage is 21 maunds per cent., and the contractor is liable to pay duty on any deficiency beyond that amount. In cases in which the excess deficiencies may be attributed to any accident or other special cause, such as long storage, &c. I submit herewith a statement, (Statement No. 4), shewing the names of the golas in which the wastage exceeded the authorized allowance, and the contractors were made to pay duty on excess deficiencies.

12th.—Where do the labourers employed in karkach manufacture on the Chilka reside? Is labour ever imported from Ganjam, or other districts, or from distant parts of the Pooree district? Do the manufacturers cultivate during the monsoon, or are they entirely dependent for subsistence on salt-making?

Answer.—(a) The karkach manufacture continues from April to the end of July at Gurbai, and Sathpara, and Haridās. Some of the labourers, (designated as malangis), employed in karkach manufacture on the Chilka have their permanent homes in the arangs where the salt is made, and part of them come from distant parts of the district, viz, Malud, (near Labbah), the pergunnah of Chaubiskud, (bordering the north-east of the Chilka lake), and Banpur, in the west, and a few from Ganjam. The proportion of resident malangis is to the non-resident as two to one.

(b) During the monopoly system, labour used to be imported from Ganjam and the distant parts in and around the Chilka, every year. Since the introduction of the excise system of manufacture, labour was never imported from Ganjam, except in last year by the contractor of Gurbai arang, owing to some misunderstanding between him and the malangis of that place about the payment of their dues. Labourers from Malud, Chaubiskud, and Banpur are now employed by the contractors of this district as during the monopoly system.

(c) The malangis of this district do cultivate during the monsoon; but as the out-turn of crops in the saliferous tracts of this district is generally not good, owing to want of facilities for irrigating the fields, they depend chiefly on salt-making for their subsistence. Moreover the crops are more than ordinarily subject to drought and flood;—drought because from the brackishness of the Chilka water it is unsuitable for irrigation purposes;—and flood, because the Chilka invariably overflows its banks to the south-east, where the malangis chiefly reside.

13th.—Under the Government monopoly system did the Government deal directly with the salt-makers, or with middlemen?

Answer.—Under the Government monopoly system, Government used to deal with the middlemen called "patiets" who employed the labourers, (malangis), under them at their own responsibility. The "patiets" used to receive advances from Government and were responsible for manufacturing the full quantity of salt for which advances were made to them. The advances used to be made in three instalments,—viz, first advance was made before the

commencement of manufacture, a second advance; when half the salt proposed to be manufactured was made, and the third or last advance was made after the storage of the whole quantity of salt manufactured.

14th.—I understand that from time to time quantities of karkach salt made on the Chilka have been destroyed as unsaleable. Please state particulars of any cases within your knowledge in which salt has thus been destroyed?

Answer.—Since Government had the monopoly, there has been a long standing practice here to destroy dirty salt as unsaleable, but I find no recorded orders or rules authorizing it. The practice is observed solely with a view to make the malangis manufacture cleaner salt. If any malangi is found to make dirty salt, the contractor reports the matter to the Collector and asks permission to destroy the salt as unsaleable. The Collector either gives the permission or warns the malangi to make cleaner salt in future. Since the introduction of excise system of manufacture in this district, (1869-70), only 43 cases were reported by the contractors for destroying 370 maunds of dirty salt; but the total quantity of salt so destroyed in 23 of those cases amounts to 70 maunds only. Such cases are very rare now.

15th.—Please state your opinion as to the condition of the salt-makers with respect to indebtedness. Are they generally indebted to the contractors, and do the contractors manage to keep them in debt so as to retain a hold on their services? Do contractors usually settle up accounts with their labourers after the close of each season, or do they keep the accounts running on? Do you think that the labourers actually receive from the contractors the full price agreed on for salt delivered?

(b.) The contractors usually settle accounts with their labourers within two months after close of each season, but complaints were on some occasions made by the labourers against two contractors of this district for delay in the payment of their dues.

(c.) The respectable and big contractors generally pay the full price agreed on to the malangis, but others are said to make some slight deductions which are most reluctantly borne by the malangis as "bakhshish" to the contractors' agents and gumshahs. I do not think that accounts are kept running on from one year to another generally; but last year a number of malangis sued one of the Gurbal contractors for arrears in the Civil Court, so that it may be presumed, as this is the only case in six years, that the custom of keeping accounts running on from year to year does not prevail to any great extent.

16th.—Do you think it would be practicable or expedient to dispense with contractors, and to allow the labourers (malangis) to make salt on their own account under license, and to store it in thatched heaps as in Madras, Government providing guards and other establishments and recovering their cost in the shape of a fixed cess on salt sold?

Answer.—The elimination of the contractors would be beneficial, but it is feared it would be impracticable. It must not be forgotten that this is a poor district—one of the poorest in India. The malangis are without any capital; if they were to charge profit it would be the same system as at present. Without the capital of the contractors and the advantages which a large directing agency has over a number of petty traders it would hardly be practicable to introduce the system contemplated, inasmuch as the malangis are extremely poor and barely live on their labour. They receive advances from the contractors twice during the manufacturing season, and the balance of their dues, on completion of storage of the salt manufactured. Should they make salt on their own account, they would have nothing to live upon till their salt was sold, especially as sale is uncertain and may take any length of time (there are some golas in which salt has been lying unsold for years). They have no other means of living than immediate labour, and cannot make salt on their own account with hope of future gain, and without immediate remuneration. If they be given advances by Government, recoverable from sales, the system would be almost tantamount to that of the old Government manufacture; and nearly all its detailed work would be involved, which would necessitate the establishment of additional establishments both in the Collector's sadar office and on the ranges. At the same time I think the present contractors are somewhat over-burdened with establishments. They made some representations on this point lately, and their establishments were reduced by the District Superintendent very slightly. Every contractor has a gola with a gadar and two chaprans on 40 and 10 Rupees respectively, and an average preventive force of one head constable and fourteen constables at a cost of Rupees 92 per month, besides an arang establishment consisting of one pass officer on Rupees 40, and one munim on 10 Rupees per month. Why should the contractors not be allowed to co-operate more? If the establishment of one contractor is

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Answer.—(a.) The malangis are generally indebted to the contractors in about the same manner as ryots are generally indebted to the mahajans. The contractor makes advances to the malangis in three instalments in February, May, and September or October. The fact of the first advance binds the malangis to work for the advancing contractor all the ensuing season; but there appears to be a contract called "bath chiti" between the contractor and malangis, fixing the rate at which they will be paid for the salt they manufacture.

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twenty men, that for two combining, (only as regards establishment charges which fall more heavily on the smaller contractors, and consequently drive the men of small capital out of the market), ought to be thirty-two; and for three combining, about forty and so on. In the excise department, one darogah, one muharrir, and five chaprans, look after about thirteen ganja godowns scattered all over the sub-district, after about sixty-nine tari shops, twenty-six opium shops, one madat shop, thirty-eight ganja shops, and fourteen country-spirit shops; besides keeping watch and ward over the distillery.

17th.—Please give statistics from your revenue accounts showing separately the quantities of (1) Ganjam, (2) Pooree karkach and (3) panga salt that has actually passed into consumption within the limits of the Puri district during each of the last five years. Please describe also the main routes by which Ganjam and Pooree karkach are distributed through the district of Pooree, and state the average cost per maund of transit of each kind of salt from Ganjam and Pooree golas, to the towns of Pooree, Khurda, Tungi, Pipli, and Gop. Is any panga salt paying duty at the rate of Rs. 2-7 consumed within the district?

Answer.—(a.) I annex a statement, (statement No. 5), showing the consumption of each kind of salt within the limits of this district during each of the last five years.

(b.) The following are the places in this district, where there are important godowns of wholesale traders, from which salt is purchased by other retail traders of the district by atrafi ravanah and charchithi forms:—

Damudarpur, Bálkati, Banmalipur, Jajhar-singh or Khurda, and Jogipatná. The routes by which Ganjam and Pooree karkach salt are brought down to the above places are as follows:—

ROUTE FOR CONVEYING POOREE SALT.

TO DAMUDARPUR SALT GODOWNS.

In the dry season.

From the Pooree golas to the Chilka beach, thence by the Chilka to the mouth of the Talma river, thence by the Bhargavi river to Kankda Nál, thence by the land way passing by Handlian, to Jodabar road, thence by the said road to the godown house.

In rainy season.

From the Pooree golas to the Chilka beach, thence by the Chilka to the mouth of the Talma river, thence by the Bhargavi river to the Damudarpur ghat, thence to the godown house.

ROUTE FOR CONVEYING GANJAM SALT.

TO DAMUDARPUR SALT GODOWNS.

In the dry season.

From the Ganjam galls by the Ganjam road to Rumbha Penth, thence by the Chilka to the mouth of the Talma river, thence by the Bhargavi river to Kankda Nál, thence by the land way passing by Handlian to Jodabar road, thence by the said road to the godown house.

In rainy season.

From the Ganjam galls to the Ganjam canal, thence by the said canal to the mouth of the Chilka, thence by the Chilka to the mouth of the Talma river, thence by the Bhargavi river to Damudarpur ghat, thence to the godown house.

TO BALKATI GODOWNS.

In dry season.

From the Pooree golas to the Chilka beach, thence by the Chilka to the mouth of the Talma river, thence by the Luna river to Sebatiapur Penth, thence by the land way passing through Salipur and Atharabhar villages to Dadhahapatna, thence by the trunk road to the godown house of Balkati.

In rainy season.

From the Pooree golas to the Chilka beach, thence by the Chilka to the mouth of the Talma river, thence by the Daya river to the Bhargavi river, thence in the said river and crossing over the Balkati river to the godown house at Balkati.

In dry season.

From the Ganjam galls in the Ganjam road, to Rumbha Penth, thence by the Chilka to the mouth of the Talma river, and thence exactly in the same route by which Pooree salt is conveyed to the godown house at Balkati.

In rainy season.

From the Ganjam galls to the Ganjam canal, thence by the said canal to the mouth of the Chilka, and thence exactly by the same route by which Pooree salt is conveyed to the godown house at Balkati.

TO BANAMALIPUR.

In dry season.

From the Pooree golas to the Chilka beach, thence by the Chilka to the mouth of the Talma river, thence by the Luna river to Jananuda Penth, thence by the land way to Babazar road, thence by passing through Gopinathpur and Singhalo villages, to the godown house at Banamalipur.

In rainy season.

From the Pooree golas to the Chilka beach, thence by the Chilka to the mouth of the Talma river, thence by the Bhargavi river to the mouth of the river, thence by the said river to Dizan Parna, thence to the godown house at Banamalipur.

In dry season.

From the Ganjam galls by the Ganjam road to the Rumbha Penth, thence in the Chilka to the mouth of the Talma river, and thence exactly in the same route by which Pooree salt is conveyed to the godown house to Banamalipur godown house.

In rainy season.

From the Ganjam galls to the Ganjam canal, thence by the Chilka to the mouth of the Talma river, and thence exactly in the same route by which Pooree salt is conveyed to the godown house at Banamalipur.

To JAJHAUSINGIE.

Poorce salt both in dry and rainy season.

Ganjam salt both in dry and rainy season.

From the Poorce golas to the Chilka beach, thence by the Chilka to the mouth of the Daya river, thence by the said river to Kalapada Penth, thence by land way passing through Saupur, Andá, and Bapur villages, to Dátáput, thence by the trunk road to the godown house.

From the Ganjam galls to the Ganjam trunk road passing through Badakal, Samakhola, Tangi and Jankin villages to the godown house.

To JAGIPATNA.

In dry season.

From the Poorce golas to the Chilka beach, thence by the Chilka to the mouth of the Talua river, thence in the Daya river to Kalapada Penth, thence by land way passing through Chariáda Tangi village to the godown house.

From the Ganjam galls to the Ganjam canal, thence by the said canal to the Chilka and thence exactly by the same route in which Poorce salt is conveyed.

In rainy season.

From the Poorce golas to the Chilka beach, thence by the Chilka to the mouth of the Talua river, thence in the Daya river to Besudhya Penth, thence by land way passing through Chariáda Tangi to the godown house.

From the Ganjam galls to the Ganjam canal, thence by the said Canal to the Chilka, thence exactly by the same route by which Poorce salt is conveyed.

The following figures have been ascertained after enquiries from the several wholesale traders of this district:—

Average cost per mound of transit of Poorce karkach salt.				Average cost per mound of transit of Ganjam karkach salt.			
From Poorce golas to the town of	ms.	(A.)	P.	From Ganjam galls to the town of	ms.	(A.)	P.
Poorce	0	2	3	Poorce	0	3	4
" " to Khurda	0	2	6	" " to Khurda	0	3	3
" " to Tangi	0	1	9	" " to Tangi	0	2	0
" " to Pipili	0	2	0	" " to Pipili	0	3	6
" " to Gope	0	3	3	" " to Gope	0	4	4

Pangá salt paying duty at the rate of Rupees 2-7-0 is not consumed within the limits of this district, as the people have a prejudice against its use.

18th.—Please furnish a statement showing the names of the contractors who have made salt under the excise system in each year since excise manufacture commenced, the quantities of salt for which each received license, and the quantities actually made. Does it occur to you that the system of manufacture and sale of salt now in force in Poorce is virtually a system of monopoly?

Answer.—The statement (Statement No. 6), required is submitted. The system of manufacture now in force is to a certain extent a monopoly, inasmuch as a few contractors can take up the whole of the sites of the district available for manufacture, and I am not altogether certain whether the present decrease was not caused by a combination among the contractors, and an undue elevation of price in consequence. On the other hand these manufacturers require large capital, and in a poor district like this, there are very few men of sufficient capital to undertake manufacture. If some check were put upon the taking up of large and extensive sites, and the cost of preventive establishments reduced, more men of small capital might be induced to co-operate and come forward to undertake the manufacture.

19th.—Is free salt allowed for fish-curing in Parikud, or elsewhere in the district.—If so, how is the manufacture regulated? Does the Parikud Raja make salt on his own account, and if so, is the salt subjected to any duty?

Answer.—(a) Free salt is not allowed anywhere now in the district for curing fish.
(b) The Parikud Raja does not make salt on his own account.

20th.—Please explain on what principles applications for licenses are disposed of; whether any rights or claims to manufacture in particular sites in Government or zemindari land are allowed to grow up in favour of particular persons; whether manufacture is restricted, under distinct orders or otherwise, to particular sites or arangs; how, in the case of several applications to manufacture on the same site, conflicting claims are settled; and whether attempts are ever made by contractors to engross the whole of the suitable land at the place of manufacture, either to exclude others or to obtain command of the supply.

Answer.—(a) An application for a license to manufacture salt being presented, the Collector after ascertaining the boundaries and the area of the land within which the manufacture is to be carried on, and after enquiring into the circumstances and capability of the applicant, forwards it to the Board of Revenue through the Commissioner of the Division, with an expression of his opinion as to whether the application should be granted or not. The Board either grants the license or rejects the application.

(b) Rights or claims to manufacture salt in Government or zemindari land do not accrue to the contractor, but a contractor who has

APPENDIX E]

committed no fault is generally allowed to continue manufacture on the same lands for some years together.

(c) Under the provisions of rule VI, at page 3 of the Salt Manual, manufacture is restricted to the sites mentioned by the contractors in their applications for licenses.

(d) In case of several new applicants to manufacture salt on the same site, preference is always given to the applicant who is believed to be the man of highest character and largest capital, all other things being equal. When there are two or more respectable applicants for the same lands, the question is settled by a division of the lands.

(e) Attempts are sometimes made by contractors to engross the whole of the suitable land at the place of manufacture, but such attempts scarcely meet with success. In 1873-74 one Saha Shandra Mallik applied for a license to manufacture salt in the suitable lands of the Chilka arangs, but the Board refused to grant such a monopoly.

STATEMENT No. 1.—(See Answer No. 2, b.)

List of Outposts maintained round the Chilka Lake for salt preventive duties, with strength and pay of the Force employed at each, and the distance between them.

Names of Outposts.	Number and Rank of Police Force employed.	Pay.	Distance between the Outposts.	REMARKS.
		RS. A. P.		
Gurbal	1 Inspector	160 0 0		* This Inspector is not attached to any particular Outpost, but has general supervision over the whole of the salt Arangs.
	1 Sub-Inspector	50 0 0		
	1 Head Constable	10 0 0		
	4 Constables at 6	24 0 0		
Krishnaprasad	1 Head Constable	10 0 0	3 miles.	
	4 Constables at 6	24 0 0		
Odaygiri (Lubbah)	1 Head Constable	10 0 0	6 miles.	
	4 Constables at 6	24 0 0		
Nandia	1 Head Constable	10 0 0	6 miles.	
	4 Constables at 6	24 0 0		
Barked	1 Head Constable	10 0 0	12 miles.	This is a Police outpost, but being situated on the banks of the lake, and being the first post between the Mafrás frontier and Orissa, performs both duties.
	6 Constables at 6	36 0 0		
Nabri	1 Head Constable	10 0 0	12 miles.	
	4 Constables at 6	24 0 0		
Kalapara	1 Head Constable	10 0 0	10 miles.	
	4 Constables at 6	24 0 0		
Bhasandpur	1 Head Constable	10 0 0	6 miles.	
	4 Constables at 6	24 0 0		
Kalapada	1 Head Constable	10 0 0	6 miles.	
	4 Constables at 6	24 0 0		
Karmalla	1 Head Constable	10 0 0	3 miles.	This is a Police outpost, but performs both duties on account of its position at the mouth of two rivers which fall into the lake, and by which all boats come into the district.
	4 Constables at 6	24 0 0		
Bazabandi	1 Sub-Inspector	50 0 0	10 miles.	
	1 Head Constable	10 0 0		
	4 Constables at 6	24 0 0		
	Total	585 0 0		
Chilka Patrol Boat, which patrols the Lake and the rivers that fall into it.	1 Head Constable	10 0 0		
	2 Constables at 6	12 0 0		
	1 Sirdar Maughit	7 0 0		
	4 Munjis at 5	20 0 0		
	Total	49 0 0		

STATEMENT No. VI--(See Answer No. 17, a.)

Statement showing the names of the Contractors, quantity of Salt for the manufacture of which License was granted to each, and the actual quantity manufactured by each since the commencement of the Evapor System of manufacture. a

STATEMENT No. VI--(See Answer No. 17, a.)

Statement showing the names of the Contractors, quantity of Salt for the manufacture of which License was granted to each, and the actual quantity manufactured by each since the commencement of the Evapor System of manufacture. a

Names of the Firms in which the Contractors Worked.	1869-70.		1870-71.		1871-72.		1872-73.		1873-74.		1874-75.	
	Quantities for which Licenses were issued.	Quantities actually manufac- tured.	Quantities for which Licenses were issued.	Quantities actually manufac- tured.	Quantities for which Licenses were issued.	Quantities actually manufac- tured.	Quantities for which Licenses were issued.	Quantities actually manufac- tured.	Quantities for which Licenses were issued.	Quantities actually manufac- tured.	Quantities for which Licenses were issued.	Quantities actually manufac- tured.
Uttar Astrang:	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Siddhi Ahluwalia	..	..	..	..	..	..	..	..	..	..	..	..
Bharadwaj Nandi	..	..	..	..	..	..	..	..	..	..	..	..
Gurukul:	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Hirachand Goswami	2,30,000	1,02,477	..	..	..	..	..	..	..	..	..	..
Satish Chandra Malik, &c.	..	..	..	..	..	..	..	..	..	..	..	..
Ramgopal Chatterjee, &c.	..	..	..	..	..	..	..	..	..	..	..	..
Narayan Prasad Acharya	..	..	..	..	..	..	..	..	..	..	..	..
Madhusudan Pattnaik	1,00,000	20,206	..	..	..	..	..	..	..	..	..	..
Pundik (S/o) Mahanty	..	..	..	..	..	..	..	..	..	..	..	..
Mahant Bhagaban Das	..	..	..	..	..	..	..	..	..	..	..	..
Sattapari:	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Jaganmala Prasad Das, &c.	1,00,000	1,02,838	..	..	..	..	..	..	..	..	..	..
Narikel Vil Jageswar (sic)	2,00,000	49,250	..	..	..	..	..	..	..	..	..	..
Abal Chandra Malik, &c.	..	..	..	..	..	..	..	..	..	..	..	..
Kanailal Ray, &c.	..	..	..	..	..	..	..	..	..	..	..	..
Bansawali Datta	..	..	..	..	..	..	..	..	..	..	..	..
Babubhadra Patre	..	..	..	..	..	..	..	..	..	..	..	..
Byam Sundar De	..	..	..	..	..	..	..	..	..	..	..	..
Kirta Lohak	..	..	..	..	..	..	..	..	..	..	..	..
Haridas:	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.
Balabhadra Patra	..	..	..	..	..	..	..	..	..	..	..	..
Sabal Chandra Malik, &c.	..	..	..	..	..	..	..	..	..	..	..	..
Srinath Ray Goswami	65,000	40,407	..	..	..	..	..	..	..	..	..	..
Manohar Chandra Banerjee	..	..	..	..	..	..	..	..	..	..	..	..
Ranjitkumar Chel	..	..	..	..	..	..	..	..	..	..	..	..
Total	6,05,000	2,71,225	32,170	4,50,000	2,00,209	1,75,615	5,00,000	3,07,121	5,000	65,474	5,000	65,474

SPATIAL FREQUENCY ANALYSIS

Statement showing the names of the Contractor quantity manufactured

Specification of Golah.		Season in which the Salt stored in the Golah was manufactured.	Quantity of Salt stored in the Golah.		Deficiency ascertained on the clearance of the Golah.		Percentage of deficiency ascertained.		Period for which the Salt was in store.		REMARKS.
			Mds.	S. C.	Mds.	S. C.	Mds.	S. C.	Yr.	M.D.	
Golah Gurbai,	No. 3...	1869-70	46,953	20 0	2,647	30 0	4	16 15	1	8 23	In these cases remission of duty on the excess deficiencies were granted by the Board.
Do do,	No. 4...	do.	2,708	20 0	149	20 0	3	25 0	1	8 9	
Do. Dokundā,	No. 1...	do.	59,451	0 0	3,142	0 0	6	9 4	2	0 9	
Do. Dwarani,	No. 2...	do.	34,823	0 0	1,307	0 0	5	7 12	1	6 1	
Do do,	No. 3...	do.	10,604	0 0	385	0 0	3	23 0	1	8 10	
Do. Kānas,	No. 1...	do.	17,123	0 0	794	0 0	4	23 0	1	9 20	
Do. Barabkudi,	No. 2...	do.	19,105	0 0	381	0 0	3	11 4	1	9 9	In these two cases the Contractors were made to pay the duty on the excess deficiencies.
Do. Gurbai,	No. 1...	1873-74	13,562	0 0	349	0 0	2	23 0	0	4 6	
Do. Baghakund,	No. 1...	1872-73	14,881	20 0	374	20 0	3	34 0	1	4 27	
Do. do,	No. 2...	1873-74	23,083	24 0	326	3 0	2	23 4	1	2 12	These three cases are pending.
Do. Barabkudi,	No. 2	do.	5,471	0 0	138	0 0	3	16 0	0	11 23	
Do. Kalupara,	No. 1...	do.	10,274	0 0	924	0 0	5	0 0	0	11 24	

No. 2.

Memorandum on the Madras Salt system by the Hon'ble
P. MACFADYEN, (Messrs. Arbuthnot and Co.)

System of Sale at the Madras Kotamurs.

1. I think the system of sale at the Madras stores could be improved with benefit both to Government and to the purchasers. At present salt is sold wholesale by the heap; and each heap is assumed to contain 2,400 Indian maunds for which Rupees two per maund, less 5 per cent. discount, say Rupees 4,560, are paid. By retail, salt is sold at Rupees two per maund, with no discount, but the advantage to the retail purchaser is that he gets exactly what he pays for, as his few maunds are weighed over to him, while the purchaser of a heap has no idea what number of bags or maunds his heap will produce. In selling heaps by retail, it has been found that they are not unfrequently short of 2,400 maunds. The reason of this is I believe the negligent manner in which salt is piled up, and the insufficient protection after it is in heaps. Owing to this, heavy rain causes a great waste always. There is no doubt that by the present system an encouragement is given to subordinates in the Salt Department to utilize their knowledge of good and bad heaps for the benefit of their friends. At any rate Government never derives any benefit from any heap that may contain more than 2,400 maunds, while the purchaser has no redress for those that contain less.

2. All along the line of railway, and I believe universally, salt is sold for consumption by measurement. We have frequent complaints from our salt writers of our bags containing less measurement than they should, although they all alike weigh 2 maunds net. There is no doubt that the salt from our salt writers is lighter than that from others and that crystals are sometimes larger and sometimes smaller, while the admixture of dirt varies. Buying by weight therefore, and selling by measurement, introduces an element of confusion into the trade, and I would prefer to see salt sold by Government by measurement, each bag of 2 maunds to contain 7 mercials.

3. I further think that not enough encouragement is given to the wholesale dealer. I would have an ascending scale of discounts in proportion to dealers' transactions, and so encourage the property in the salt to pass quickly from Government to the purchasers. I know that if the salt monopoly were mine, I would encourage to the utmost people to help me to turn over my money quickly, and this is what discounts to wholesale traders would do.

Railway Depôts and Rates.

4. I annex a memo. of the rates we now pay for the transport of salt to the different railway stations. Till quite recently any sender of 500 tons per week received a discount of 5 per cent. off these rates but this concession has just been withdrawn for some reason. I do not know. I think that the policy of the railway should be to encourage large customers, more especially when dealing in salt, as this is an article the railway have never had the monopoly of.

5. At most of the stations the railway provide godowns in which to store and sell the salt, but in some places this accommodation is not provided. Despatch of salt by rail is also somewhat impeded by the Company insisting on cash payments for all goods. Hitherto against a deposit, credit was given and bills rendered weekly. This system works well at the custom-house, but the railway have set their face against it. In consequence, delay in despatching salt is not infrequent.

Competition by Cartmen.

6. There is no doubt that competition by cartmen exists, and I am told that it is principally to Trivellore, Conjeveram, and Vellore, from Madras, and to Tirupatty from Nellore. I enclose an extract from a report we have just had from our new superintendent, whom we have appointed, and who has just been up the line. It will be seen that he attributes a good deal of our poor sales to the earth-salt manufacture.

Selling rates at different Stations.

7. In the same return as gives the railway rates, will be found a memo. of the prices at which we have been selling salt during the last year. We find that to cover expenses, (interest,

establishment, &c.,) three annas and four pie per bag at least, must be added to the first cost of the salt and the railway fares. To show that the business is not an Eldorado, I may state that its results to us have been

1872	...	Rs. 22,500	...	loss.
1873	...	" 9,400	...	profit.
1874	...	" 18,500	...	profit.
1875	...	" 4,500	...	loss.

We are trying the business a little longer, but unless it improves we will have to give it up.

Quality of Salt.

8. So far as I can judge from what natives tell me, there is no fault found with the Madras manufactured salt. It is liked both as to quality and price, and I am quite sure that no English salt can compete with it. Even at the same price as the Madras salt, English found no sale. The only way to make English salt liked, is to impose a less duty on it than on the manufactured article, and so enable it to be sold cheaper.

Government Monopoly as compared with Excise.

9. I do not believe an excise generally over the Presidency could be successfully managed so far as financial results to Government are concerned. Smuggling would be too easy and repression most difficult and expensive. In a few large centres like the Chingleput district, the excise experiment might be tried, and I believe it might succeed. I annex copy of a memo. of the general terms on which I think Government might get capitalists to take up the business. This memo. I submitted last year to Sir W. Robinson. I have no doubt that cheaper terms would be offered by some people, but in dealing with an article like salt, character should count for something when arranging the contract. Government want to make sure of their revenue, and to be certain that the supply of salt will not fail. These two things cannot be attained under the excise system, except on terms something akin to what I have sketched in my memo.

Spurious Excise.

10. The present arrangements and ports are convenient enough. If the excise system is adopted, the contractors ought to be bound to perpetuate something like the existing system of salt for export.

General Remarks.

11. I am by no means an enthusiastic advocate for the abolition of the Government monopoly in salt. On the whole it works fairly well, and the change to excise is an experiment, the results of which no one can certainly foretell. The change is urged in the interests of Cheshire salt manufacturers: but I believe they will find the monopoly is simply transferred, not abolished, and that under excise, English salt has no better chance than heretofore. As a general principle, I quite agree that all trade is better left alone by Government. But in my opinion the agitation against the salt monopoly has been got up under entirely false pretences, and I am not at all sanguine that the excise system will benefit anybody. The consumer I believe is satisfied—the revenue is an increasing one,—and I do not believe that Mr. Falk or his salt brethren will gain anything by the change they advocate.

P. MACFADYEN.

2nd May, 1876.

Extract from Report from Superintendent referred to in para. 6.

"Our bags with salt sent from the Salt Cotar by our gomastahs are generally deficient in weight and measurement, say, from 5 to 7 seers per bag, which is equal to 3½ to 4 measures, or say, 14th part of a bag.

"There are so many causes which prevent the sale of our salt, that to enumerate them in detail would be impossible. As an instance of this I may mention, that at some stations, viz., Tirupatty, Poody, Poothoor, &c., merchants trading in salt are in the habit of bringing a kind of salt manufactured in the Nellore District which is nearly equal to our salt, and how they undersell us is in this way. They take jaggery from Tirupatty to Bodilingumpettah taluk in the Nellore District which is exchanged for the salt, and the carts after unloading take the salt at a very low hire, or have to return with empty carts, and this enables these merchants to earn a profit so much as to compensate them. They thus sell at 16 to 18 measures per Rupee, say value 3-8-0 per 2 Indian maunds; whereas our rate is from Rupees 4-6-0 to Rupees 4-10-0 according to distance of stations."

Schedule of railway rates for, and selling prices of salt, referred to in paras. 4 and 7.

STATIONS.	Rate sold from 21st January to 16th April 1875.			Rate sold from 17th April to 3rd Sept. 1875.			Rate sold from 4th Sept. to 14th Jan. 1876.			Our present rate.			Present Railway charge for each bag.			REMARKS.
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
Adeni	5	9	0	5	3	0	5	0	0	5	1	0	0	12	4	The rates given in this statement are per bag, i. e. for 2 Indian Maunds Salt net.
Amboer	4	11	0	4	11	0	4	10	0	4	10	0	0	6	10	
Arenum	4	6	0	4	6	0	4	5	0	4	5	0	0	3	2	
Arcof	4	6	0	4	6	0	4	5	0	4	6	0	0	4	6	
Avenashy	5	1	0	5	0	0	4	15	0	5	0	0	0	12	0	
Bangalore	5	1	0	4	15	0	4	14	5	5	1	0	0	13	4	
Bellary	5	9	0	5	3	0	5	0	0	5	1	0	0	12	2	
Cadambatore	4	5	0	4	5	0	4	5	6	4	5	0	0	2	2	
Cadgoody	4	1	0	4	15	0	4	14	5	5	1	0	0	12	6	
Codoor	4	12	0	4	12	0	4	11	0	4	11	0	0	5	6	
Colar	5	0	0	4	15	0	4	14	5	4	15	0	0	10	10	
Colabatore	5	4	0	5	3	0	4	15	0	5	0	0	0	12	2	
Conjeveram	4	5	6	4	5	6	4	5	6	4	5	0	0	2	4	
Coppam	4	14	0	4	13	0	4	12	6	4	13	0	0	2	6	
Cuddapah	4	11	0	4	11	0	4	10	0	4	12	0	0	2	0	
Erode	4	15	0	4	15	0	4	14	0	5	0	0	0	11	10	
Ghooty	5	8	0	5	2	0	5	0	0	5	2	0	0	12	0	
Goonattur	4	9	0	4	9	0	4	8	5	4	9	0	0	5	10	
Macdonald's Choultry	4	14	0	4	13	0	4	13	0	4	14	0	0	10	10	
Mailputty	4	10	0	4	10	0	4	9	6	4	10	0	0	6	3	
Morapur	4	12	0	4	11	0	4	10	0	4	12	0	0	8	2	
Nagery	4	8	0	4	7	0	4	7	0	4	7	0	0	6	4	
Nundalore	4	12	0	4	12	0	4	11	0	4	11	0	0	8	8	
Poodi	4	9	0	4	9	0	4	8	6	4	9	6	0	3	8	
Puttoor	4	8	0	4	8	0	4	7	6	4	8	0	0	5	2	
Raichoor	5	11	0	5	5	0	5	0	6	5	2	0	0	14	0	
Rajampett	4	10	0	4	9	0	4	8	6	4	9	6	0	6	4	
Reddyputty	4	16	0	4	9	0	4	8	6	4	9	0	0	11	10	
Salem	4	13	6	4	12	0	4	11	0	4	13	0	0	10	2	
Sholinghur	4	7	6	4	7	6	4	6	0	4	7	0	0	4	0	
Smakery Droog	4	15	0	4	14	0	4	13	6	4	14	0	0	11	4	
Todipatty	4	7	0	4	7	0	4	6	0	4	7	0	0	2	6	
Theruvellam	4	10	0	4	10	0	4	9	6	4	10	0	0	5	0	
Therupathy	4	10	0	4	9	6	4	8	6	4	10	0	0	7	6	
Triptoor	4	10	0	4	9	0	4	8	6	4	10	0	0	1	10	
Trivellore	4	9	0	4	7	0	4	6	6	4	9	0	0	3	8	
Vaniambadi	4	11	0	4	10	0	4	9	6	4	11	0	0	7	6	
Yellare	4	7	0	4	6	0	4	5	6	4	7	0	0	5	0	
Yerragontla	4	14	0	4	14	0	4	13	0	4	14	0	0	9	2	
Palgaat	0	0	0	5	1	0	5	1	0	5	1	0	0	13	2	

Memorandum submitted to Sir W. Robinson, referred to in para. 9.

1. From enquiries, I find that it would be necessary, if we entered upon salt manufacture to have handed over to us the monopoly now in the hands of Government both at Covelong and Ennore, and that we should have the privilege of storing at the existing platforms at the Salt Kotars near the Railway Station, and Eome's Gardens, and any other places where Government salt is now stored.

2. Government would require to undertake that no new salt pans should be authorized, — that is to say that the manufacture, whether undertaken by Government or other capitalists, shall be confined to the pans already in existence in the Presidency.

3. Neither Government nor other capitalists must be permitted to manufacture within the radius of the districts so far supplied by Covelong and Ennore.

4. The existing stocks at these places to be handed over to us at the best price, which so far as we have been able to ascertain, is about 2½ annas per maund. From this of course will be deducted the usual 5 per cent. allowance for wastage, &c.

5. We will undertake, barring cyclones and other unfavourable weather, to manufacture annually about 15 lakhs of maunds, which, with the existing stock, will always leave about one year's supply in hand.

6. As at present advised, we do not anticipate any difficulty in arranging with the present salt cultivators to transfer their services to us. We think that a simple notice from Government that we are in future to have the salt monopoly will suffice to effect this object, and we do not anticipate that any claims for compensation would be made, or could be established.

7. We would wish that the arrangement with us should be for ten years, as at first the business would be risky and difficult, and it is to the later rather than the earlier years that we would look for our pecuniary reward.

8. On every maund of salt taken into consumption, we would pay Government an excise duty of Rupees 1-13, less 5 per cent. as usual. The payments of duty to Government we would make, as in the case of the Coimbatore abkarry, on the 25th of the succeeding month to that in which our sales are effected.

9. That also, as in the abkarry, Government fix minimum and maximum selling prices, which we would suggest at say, Rupees 2-1 and 2-4 per maund.

10. That we would do our best to improve the quality of the salt, and that should we find the improved quality meets with the favour of the consumers, and they are willing to pay an enhanced price for it, we will be at liberty to enhance the selling price to recoup the extra cost of the improved manufacture. It is obvious for our own sakes we would put on no price that would interfere with consumption, or lead to imports from other districts, but if the people get a superior article, and are willing to pay for it, it seems only reasonable that we should benefit by our enterprise.

11. The manufacture and the sale of our salt will be carried on in accordance with the rules now in force at the office of the Deputy Collector in charge of the Salt Department.

12. That the present canals along which salt travels be kept in good order by Government. We of course will have the cost of opening out and keeping in repair such branch channels as we find necessary for the proper manufacture of the salt.

13. That the export of salt from Covelong and Ennore shall be sanctioned as at present and that we be permitted to sell for this purpose at Rs. 25 per garce at Covelong, and at Rs. 28 at Ennore.

14. That any change in the excise duties on salt be made applicable to the whole Presidency, and not to any particular districts.

15. That some moderate lump sum per mensem be paid by us for the establishment and guards that Government will keep up in connexion with our manufacture. We desire to see our way clearly, and therefore suggest a lump sum, instead of having to meet an expense which Government may make fluctuating.

16. Government will no doubt see that the laws against smuggling are strictly enforced. Just at first, the private monopoly may induce smuggling, but this will soon die away, when it is seen that Government are still interested in putting it down.

17. The advantages of our proposals to Government are,

i. That the policy of the Government of India will be carried out, with no risk to the revenues.

ii. That it will be our duty and our wish to improve materially the quality of the salt, and with this view, we will place ourselves in communication with manufacturers in Europe, and adopt such improvements in the process, as are found to be adapted to this climate.

iii. That a large establishment will be saved to Government; and that they will escape all the losses that have hitherto fallen on them through cyclones, and the peculations of their subordinates.

iv. That we, instead of Government, will find the funds to lock up in the stock of salt that it is essential to keep.

v. That the excise system will be tested on a scale that will guide Government as to the future of the salt trade.

No. 3.

A letter dated 22nd May 1876, from Messrs. PARRY and Co. of Madras.

1. We have, as promised by our Mr. Shaw, the honor to address you on the subject of salt manufactured on the excise system.

2. The Commission were anxious to know whether we thought Europeans with capital would be willing to enter into the business, and our opinion is that they would be willing to do so on certain understandings, the principle of which would be that the interference of Govern-

ment should be of the very least—only that which is absolutely necessary—and that there should be no stipulation that books are to be kept open to the inspection of Government officers, and returns made of cost and profits, &c. In this country there is no Government record that can be kept secret, and the Madras Government have lately had experience how papers, that we might call secret papers, were obtained and published by a local journal, so all our labours and expenditure of capital would be wasted for the benefit of native competitors.

3. We would also be unwilling to enter into salt manufacture, if the salt is to be condemned owing to a trace of a chloride or sulphide not that of sodium. We could only undertake to turn out salt in the ordinary way, in which traces of foreign salts are always present. We would suggest that the Government give us a grant of, say 100 to 200 acres of land, on the understanding that we guarantee to turn out annually so many garce of salt.

4. We think it is desirable that Government should not be able to claim the salt at a certain price, but we do not know that we should make this a vital question if it were conceded that we could insist on Government purchasing that which we had manufactured. At the same time we think the true principle is the non-interference of Government.

5. We think some arrangement might be come to at the end of the manufacturing season to permit of Government withdrawing their police and so saving all establishment and risk, such as offering the manufacturer, say, 15 per cent. rebate, in addition to the usual 5 per cent. for wastage, in consideration of his paying within, say 30 days, for the whole quantity weighed and handed to him. The pay of the police, costly as it is to Government, does not represent the whole cost, as the Commission must be well aware, and we are in some uncertainty whether the rebate asked would be sufficient.

6. With permanent pans the salt season could be increased six weeks to two months, and the quality of the salt much improved.

7. We think that the excise system can be made a success if the Madras Government will treat the contractors liberally, and not view with jealousy the fact that they are making money out of the Government.

No. 4.

A Statement made to the Commission by Mr. CAMMIADE, Salt Merchant of Madras.

I own a salt work near Madras and work it under the monopoly. My father was the first to take up the trade in railway-borne salt, about 16 years ago, and for many years was by far the largest exporter from Madras. After my father's death, my firm got into difficulties, and our trade consequently declined, but the firm with which I am now connected does the largest salt business in Madras.

I do not consider it to be the interest of the manufacturers, under the monopoly system, to make good salt. The same rate is given whether it be good or bad, and it is cheaper to scrape the salt dirty than clean, and to deliver it wet than drained and dry.

When there is a great demand for salt and the works hardly suffice to produce the required quantity, all the salt offered at the platform is taken, the standard gradually deteriorates, and eventually a bad quality of salt alone is produced.

Land on which it is decided to open new salt pans is not put up to public competition, but is usually given to the friends or relatives of the Salt Deputy Collector or Superintendents.*

Under the monopoly the sites for new works are ordinarily selected by the Deputy Collector and Superintendents. Their selection may be judicious or otherwise, but when once a pan is opened, the tendency is to keep it working, no matter how, comparatively speaking, unsuitable its site may have turned out, and to induce Government to spend large sums of money on repairs and improvements. For example Covelong is probably better suited for sales and manufacture than Ennore, and the northern pans, but Government insist on keeping the northern pans at work at considerable expense, and will not sanction any extension or new works at Covelong, though the land is in their hands and available.

I think there is no reason why Government should go to the trouble and expense of conveying salt to store as they at present do at the Madras Cotaurs. That can be done better by private traders. The Contractor is, by the terms of his contract, bound to furnish good boats,

* Mr. Stokes explains that in Chingleput, the Mirassidars have preferential claims to all waste lands.

tarpaulins, &c., but as a matter of fact, this is not done. The boats supplied are leaky, and in bad weather the boatmen make use of the tarpaulins to cover themselves, and great wastage is the result. Though a single day would be sufficient, it now takes four days from the time the salt is put on board at Ennore to when it is unloaded at Madras. The usual term for transport of the salt from the pans to Madras is from the middle of April until August, and sometimes later. The salt is put in the boats and lumps of mud are placed at intervals on the top and stamped. Over all, a tarpaulin or some such covering is placed, and the mud gets rubbed over the salt thereby, and injures it. If a private trader had to do this work, he would care that his own salt was not unnecessarily damaged.

Salt brought to the platform on, say, the first of the month, is left lying uncovered exposed to any rain that may happen to fall and is not weighed in or stored until the 15th. No attempt is made to dry the salt before storing it, and the heaps are not sufficiently well thatched to protect them against heavy rain. All these points would be attended to and corrected, if the business were conducted by private parties.

In some respects, the Superintendents and petty subordinates are in a position to favour their friends and to increase or decrease the profits of individual manufacturers, by getting improvements made to their works, new channels dug, embankments raised, &c., at Government expense and refusing them in other cases where equally necessary.

The Kudivaram being paid when the salt is delivered and stored, great competition exists amongst the manufacturers at Madras to get their salt taken over early, and influence and money are used for the purpose, and again after the salt has arrived in Madras, to get it weighed in quickly, and the Kudivaram disbursed.

Under the monopoly system, good salt is just as likely to be rejected as bad. There is no standard to judge by, and the men who have to decide know little or nothing about it.

In the sale of salt at the Madras Cotaurs, unmeaning and vexatious rules are made and altered at will by the Superintendents.

Wholesale merchants, i. e., purchasers of entire heaps, were not allowed to clean from the Cotaurs a quantity less than 12 maunds at a time. 15 days are allowed to clear a heap. This rule is evaded by wholesale merchants who bring a number of their purchasers on the platform together, and so contrive to send out 12 maunds at a time, as they are not bound to declare whether the men who carry it away are their own or traders' coolies. Retailing or selling in any quantities on the platform is prohibited by rule, but as a matter of fact such sales are the custom in the Madras trade.

Notwithstanding the rules regarding selling heaps in consecutive order, it is possible for Superintendents to favour their friends by giving them good heaps, when the turn comes to sell bad ones, and this is often done. Good salt and bad salt are stored side by side, so that the man who happens to get a good line of heaps may be doing a good business while the purchaser of the next line may be losing his money. Under the present system, no choice of salt being allowed, the trade becomes purely a matter of speculation.

At present at the Madras Cotaurs the Superintendent and his subordinates have apparently no direct inducement to overstore as the salt is never sold until 4 months after storage, and generally not for a year later, so the man who stores a heap does not know who will buy it and there is such keen competition in the trade, that I think if anything of the sort were attempted, it would soon come out.

I have heard that Superintendents and their subordinates have sometimes paid of their own store salt openly on the Government platforms, and sell it as Government salt, pocketing the proceeds. Sometimes ryots bury salt under the heaps on the drying ground. The heap is taken away and given into store, and after the guards have been removed for the season, the buried portion is carried off.

I should think Covelong would be a better place to open new pans under the excise system than the north of the Chingleput District. A large export trade would grow up under the excise system there, and there are admirable sites for pans. I would open a pan there if a site were given me.

The trade discount does not make any difference to wholesale traders. There is competition in that, and all get the same. It is the retail trader who benefits by it. The average gain in buying a whole heap is from 1 to 2 per cent., i. e., the real wastage is from 4 to 8 per cent. This estimate is based on measurement. I have occasionally weighed a few bags but we ordinarily fill them by measurement. In October 1875, wholesale merchants, &c., were selling salt by retail from their heaps on the Madras platforms in two maund bags, (i. e., the bags alluded to above) at Rs. 3-13-0 per bag. The price for the same bags now is Rs. 4-2-0.

I have known cases of excess in heaps which my firm have purchased wholesale. There were some cases last year. They are unfrequent. I believe that the Superintendents habitually store a little excess salt in each heap, so as to reduce the wastage. They have found by experience that men who store accurately have difficulties in explaining deficiencies caused by natural wastage, and have seen them get into trouble about it.

I am connected with a firm which sends salt by rail to Cuddapah and the Ceded Districts. Our sales have recently fallen off much, owing to the competition of earth-salt. I believe that the manufacture of earth-salt has considerably increased under the new license system. The demand for sea-salt has certainly decreased since its introduction. Earth-salt never used to be brought into Vellore and North Arcot. It is now brought in large quantities into Vellore, Arcot, Arcotum and Conjeveram. The traffic in earth-salt is extending and it has now got to some of the principal centres of trade. It is mixed with sea-salt, and the mixture sold as the latter. The earth-salt manufacturers now make much more salt per moda than formerly and the tax is on the moda, and not on the quantity made.

We always sell salt by measure at the Railway stations. We usually sell by the bag of two maunds, seldom in smaller quantities, but our agents retail sometimes.

The profits in the trade are now very small indeed. The price at which salt sells now is really less than cost price. Our profit consists on what we can get out of the 5 per cent. discount, and is increased by our being allowed six months' credit, during which time we can turn our money over several times.

No. 5.

A letter from J. J. L. RATTON, Esq. M. D. on special duty in connection with salt. No 115, dated 15th May, 1876.

1. I have the honor to forward to you a memo. about Madras Salt manufacture in the shape of a well digested resumé of my reports on the subject, which I hope will prove of use to the Commission.

2. My connection with salt enquiries in this Presidency dates from the beginning of 1872, and I visited and reported upon all the salt stations on the East Coast in that and the following years, so that my remarks may be at the present time a little out of date, but as far as I am aware, and I have revisited many of the stations subsequently and even recently, no great changes have taken place.

3. The Madras salt works are scattered up and down a line of coast about 1,000 miles in length extending in an oblique line from about the 8th almost to the 20th parallel of north latitude. They differ from each other very materially as regards climate, soil and even brine supply. Many feel the influence of the south-west monsoon to a considerable extent, others hardly at all. The majority are founded upon some variety of clay, but a large number rest upon loam mixed in different degrees with sand. Some evaporate sea water, others, backwater and others again, subsoil brine. Many other local features powerfully influencing salt produce might be mentioned, in which they differ widely from each other. The natives also that work the pans are of different races, distinct at least in point of language, those to the south being Tamil, those to the north, Telugu. Add to this that hardly any centralization for the purpose of stamping the manufactories with uniformity exists, that the coolies in each place follow the custom which local tradition and experience have planted there, and we might expect to find very different varieties of salt produce.

4. Considering the foregoing circumstances, one of the most striking features of Madras salt, so called, that is of the produce of all its widely scattered salt works, is the uniformity of its physical and chemical characteristics. These characteristics distinguish it moreover from any other salt that I am acquainted with. I believe, I could not mistake a sample of our manufacture for one of Cheshire, Marseilles, Bombay, Persia, or Lahore salt. It is *stri generis*, and one description will as regards main features, suffice to characterise all the salt produced from Ganjam to Cape Comorin.

5. Madras salt crystals are very irregularly cubic, varying from a line to three lines in diameter. They are opaque and dead white or whitish brown in color. They are light, moist and friable, easily crushed and yielding moisture on pressure. According to an analysis made in 1873, the chemical composition of the salt then was roughly as follows. Sodium Chloride 89 per cent., water 5 per cent., dirt 1 per cent., and salts chiefly magnesian chloride and sulphate 5 per cent.

6. It cannot but be of use to enquire into the causes which tend to produce such uniform results in so many diverse manufactories. The physical characteristics of the crystal, the most objectionable of which are want of weight and cohesion, are due to rapidity of crystallisation. How comes it that rapid crystallisation is practised from one end of the Presidency to the other? At first I was under the impression that this was simply the result of greed, that the manufacturers were anxious to realise the rupees as quickly as possible, and consequently raked up the salt as often as they could, and the custom which obtains at many salt stations of paying for salt as soon as it is made and delivered, strengthened this impression; but there is another reason which I did not attach sufficient importance to at first, and which I have not as yet noticed in my reports.

7. In the districts north of Madura, that is, in seven of the nine maritime or salt-producing districts, the climate is unfavorable to the manufacture of very well and solidly crystallised salt. The sea breeze, the long shore wind and the land wind each in their turn, blow with such violence over the unsheltered salt swamps that sheets of brine from three to twelve inches in depth are thrown into rapid wave motion to an extent which almost annihilates the force of crystallisation. Deeper irrigations, even if conducive to crystal formation in this climate, which I very much doubt, have no great chance of evaporating to the point of yielding up the looked for crop of salt, before being overwhelmed and washed away by the rains which fall here irregularly, and therefore more or less unexpectedly in February, March, April or May. The manufacturers are therefore in a manner forced to adopt the practice of shallow irrigations, and there is no doubt that these irrigations, by affording a comparatively tranquil medium for the salt to crystallise in, offer the best chance of procuring good crystals on this coast.

8. There is a right way and a wrong way, however, even of using shallow irrigations and the natives have, many of them at least, in following traditional lines of practice, clung to the wrong way. In the first instance, all use irrigations of weak brine, much too shallow, which soften the clay pan floors, first by reason of the weakness alone, and secondly because they are not dense enough to resist wind motion: and these evaporating leave but a scum or film of scratched crystals imbedded in the mud.

At many places, however, a second irrigation is used, and sometimes a third, and these latter by dissolving the already formed, attain to the conditions of depth and density necessary to proper crystallisation, that is, a depth of 2 inches and a density of 25 Beaumé. There is nothing to be said against this practice, except that it is bad treatment for the pan floors, and that it leads subsequently to the production of dirty salt.

9. It is not the use of shallow irrigations alone, but of shallow irrigations of weak and muddy brine, permitted to evaporate to too high a degree of density and allowed to mingle with strong magnesian mother liquors, which force sodic chloride to separate rapidly, which is accountable for the production of bad crystals. The impurity of the salt is due to the same causes, but of this later. The remedy for all this is to be found in the proper use of the hydrometer. Making salt, as it is made at our salt pans, without an hydrometer, is working in the dark, and the surprising thing is that the natives make it as well as they do without any scientific aid whatever.

10. Shallow irrigations of saturated brine properly worked with the hydrometer, will yield good crystals at any period of the season. I use the expression good crystals in a purely commercial sense here. I do not mean geometrically regular and transparent cubes, but I mean fairly heavy, solid and well-knit crystals better and much larger than those made in England by the boiling process, and, as far as my experience goes, well enough adapted to the exigencies of the Indian carrying trade whether by land or sea. As regards the latter point, most of our salt is even now suitably formed for carriage, and much of it goes to Calcutta, where its presence begins to be felt by the Cheshire trade.

11. There is one characteristic of Madras salt which the use of the hydrometer cannot, I believe, touch. I allude to its dead white color and opacity. All the other salts of commerce are more or less translucent. Madras salt is as opaque as a bit of lime. This arises, as far as I have been able to ascertain, from the process of crystallisation going on in a medium impregnated with fine particles of sand in suspension, for which the clay bed floor is responsible. I have noticed that salt formed from clear brine in a clean cement, gypsum, or other artificially prepared bed is translucent. Salt formed from the same brine under similar conditions in an adjoining clay bed is absolutely opaque. Other observations I have made, which need not be detailed here, lead me to the conclusion that opaque salt is an inseparable concomitant of clay salt beds. I suppose because fine particles of sand are stirred up, and being included in the crystal with its water of crepitation, obstruct the light.

12. Dirt or grit, which is a mechanical impurity and a very unpleasant one for those who season their food with unrefined bazaar salt, can be got rid of in any great measure by care and attention to the state of the pathways and bunds at the salt pans, and by adopting an altered method of harvesting the salt. Pathways and bunds, if not constantly watered and tamped, dry up and furnish a large quantity of dust which drifts on to the bed of salt crystals.

In practice it is expensive work keeping these parts in order unless the manufacturer has had the forethought to make his bunds no higher than required to retain the water. I think that in the crystallizing beds, plank partitions instead of, or in combination with, clay bunds should be used, as in France.

13. It is the custom at nearly all the salt stations in this Presidency to scrape the salt about every fourth day as soon as a single layer of crystals has formed. At each scraping the clay bed floor is raked up and the salt crystals receive a baptism of mud. A great step in advance would be made by letting the crystallisation go on as long as possible until several layers of salt amounting to an inch or more in thickness had formed; for, supposing all the layers of salt removed and stored, one on top of the other, in horizontal strata, the mud smearing being the same for all, a series of strata, each stratum one inch in thickness would contain only a quarter as much dirt as a series of $\frac{1}{4}$ inch thick strata. The practice of allowing salt to crystallise undisturbed in the bed until threatening rain renders it necessary to harvest it, has other advantages, such as economy of time, of labor, and of the expensively prepared bed floor itself.

14. Although we are in India, and considerations drawn from the tastes and habits of the people have found local expression here and there in extenuation of the issue of inferior and dirty salt, I believe that the great mass of the people of this country are as anxious to obtain good salt as good rice or anything else that they pay for. The idea of a prejudice against white salt originated I believe with pan-holders, manufacturers, salt subordinates, petty traders and others interested. The people judge of the salt by its taste and appearance alone. The former does not vary appreciably in a marketable salt, and as for the latter, supposing local prejudice existed, there is dirt enough in the bazaar to sophisticate the salt to any desired extent.

15. The chemical purity of the salt is a much more important matter than its physical condition. I think that the axiom that where Government monopolises the production of an article which is a first necessity of life, it is bound to supply it pure, applies in this country as regards salt. What is pure salt? Any of the salts of commerce may be taken as a standard of purity. Marseilles salt contains 97.20 per cent. of Sodie Chloride. Cheshire salt contains 98.25. Lahore 98.20. In none of these salts does the magnesia adulteration reach 2 per cent. except Marseilles salt in which it amounts to 2.71 per cent. Now the monopoly salt according to the analysis made by Surgeon Macrae, M.A., M.B., in 1873, contains but 88.87 per cent. of Sodie Chloride, which is associated with 4.88 per cent. of Magnesia Salts. The Commission will be able to correct this statement, by comparison with recent analyses.

16. There is considerable room for improvement in the chemical quality of the salt and my own appointment attests that Government does not rest satisfied with it. There is nothing whatever in the climate, soil or sea water of this Presidency to prevent the manufacture of commercially pure salt, nor is the process a difficult or an expensive one. I pointed out in my first report that the impurity of the salt was due to the evaporation of the pan brine to too high a degree of density and to the prolonged use of mother liquors, and I have since shown how as in France the pure article is produced. All that is required, apparently therefore, is a little knowledge, an hydrometer and a little care.

17. It would not be right of me, however, with more than four years' experience of salt, gained at the expense of Government, to pass the matter over thus lightly, with the pretence that a little science and a few hydrometers will be able to bring about the required improvement in the quality of Madras salt. My own impression is very strong that there are three or four barriers to improvement in manufacture which must be got over somehow, before science and hydrometers can be made of any use.

18. The organisation of the Salt Department itself is a difficulty in the way of introducing improvements. A Government of other days took over the salt pans just as it found them and organised the Salt Department exclusively as a machine for collecting revenue, leaving the salt to be made, as it was, and is still, entirely by coolies. The Officers in this Department never received any scientific training and were never asked any questions about salt manufacture on appointment. These Officers are Deputy Collectors and Salt Superintendents. The former are able men in this way, but most of them have been promoted to the Salt Department for ability shown in other branches of the service, and they take charge at a time of life when men are averse to undertaking new studies. A native Deputy Collector who borrowed my reports and said he studied them, came to me overflowing with an astounding muddle of scientific terms, and shortly convinced me that he did not in the least understand what he had read. I do not instance him as a type of the class, but I believe there are one or two others like him, and these men are charged with the production of much of the salt of this Presidency.

19. The Salt Superintendents are men comparatively of a very inferior class and are recruited from the Collector's Offices, as a general rule. They are good at accounts and suppos-

ed to be honest. There is one at each salt station, or collection of manufactories, and he is in sole charge of its operations for about nine-tenths of the season. These men are not supposed to be capable of carrying out scientific reforms in salt culture; the burden of doing so would rest principally upon them.

20. The salt manufactories are too scattered and too far from public and official men. No one who has not visited them all can have any idea of how far away and remote practically even from the influence of the Board of Revenue many of the salt stations are. The Deputy, in whose charge they lie, visits them as a rule twice in the season for a short time. A Police Officer perhaps looks in to inspect his men, and for the rest of the year they are undisturbed. Meanwhile the Superintendent in charge, isolated and powerless, speedily finds his own level in the village hive and curries favor with the local magnates as is the native habit. In this conservative circle there is no room for the spirit of reform or innovation in salt culture.

21. The number of separate ulthams at each station is too great to admit of the introduction and proper working of a satisfactory system of salt manufacture. If the Officers of the Department had a competent knowledge of the subject from the first, they would never have allowed the comparatively small enclosures known as salt stations to be broken up into a number of miserably small holdings, which it would be an abuse of terms, to call salt manufactories. The mischief is done now, and the legal rights and claims and privileges of a hundred men or more at each small station bar the way to progress.

22. The legal rights enjoyed by the contract manufacturers include the right to make the salt anyhow they please so long as it is of a certain size and whiteness. The Board of Revenue issue instructions from time to time regarding salt manufacture, but these lose much of their force in passing from Chepauk to the cooly finally concerned at the salt pans, and he having no contract to obey the Board's Orders and no mind to appreciate them, only attends to them as long as the Superintendent has time to stand over him and compel him to do so.

23. I am not alone in the opinion I have expressed of the organisation of the Salt Department in relation to salt culture as distinguished from the salt revenue system. Mr. Clarke, a former Member of the Board of Revenue, who visited all the salt stations in the years 1860 to 1864, frequently refers to the same subject. And the Honorable Sir W. Robinson, M.C.S., when a Member of the Board in 1871, recorded a Minute to the same effect.

24. The Salt Department has no head, and it is probably because it is in the condition of a Department without a head that the attention of Government has been attracted to it. It should have a responsible officer at its head with a thorough knowledge of the subject of salt manufacture, and capable of turning the saline resources of the extensive sea board to the best advantage. The Board of Revenue has more than once recommended the appointment of such an officer, the interests involved require it, and the revenues of the Department are well able to afford it.

25. Some at least of the executive Officers of the Department should be chosen with an eye to their knowledge of salt manufacture, and all the Superintendents and Assistants should be required to possess a competent knowledge of the subject.

26. Whenever railway termini admit of the concentration of salt manufactories and local facilities for the purpose exist, outlying stations should be shut up, or allowed to die out, as rail-borne salt takes their market from them.

27. These remarks contain the pith of my reports on salt manufacture in Madras and the means of improving it. I have not recapitulated in detail all the faults of the native systems of manufacture, nor have I described the process of manufacture which I conceive to be the best adapted to the climate and soil we have to deal with, as these matters have been already treated of in my reports, which the Commission have seen, and to reintroduce them here would be to extend this memo. far beyond its legitimate proportions. My aim has been to show from my reports what Madras salt is like, why it is so, and how it may be improved.

28. As regards the last and most important point, how it may be improved I must again express my conviction that no real and permanent improvement is likely to be effected until Government takes the final step of manufacturing the salt itself. Government supplies the Police, the Police lines, the Treasury, Guard-house, and other buildings, the Deputy Collector, the Superintendent, the Assistant Superintendents, the Clerks, Pecos and Vetties, the embankments, encircling canals, the brine channel from the sea for the supply of the works, the platforms, weighing machines, salt coverings, gates, bridges, &c., and in many cases the ground itself, and there stops short and requests a very ignorant and abject class of natives to step in and make the salt: even advances them the money to make it if necessary, in all cases, pays them a higher rate for making it than it could be made for departmentally, and in all cases, as the analysis show, receives an inferior article in return. An article much inferior to that which could be made by Government Agents.

29. The sum and substance of my remarks may be condensed as follows. Madras salt is uniform in character. It is easily distinguishable from other salts. It is chemically inferior to the salts of commerce. It is the duty of Government which monopolises its production to provide it pure. It can be made pure by a simple process of manufacture. The organisation of the Department and the contract system stand in the way of the adoption of this process. The most efficacious remedy is to reorganize the department, abolish the contract system, and make the salt pure under Government supervision.

Dr. Rutton was present at a meeting of the Commission at which the subject of his letter was discussed, and with reference to questions then put to him desired to add to his letter the following remarks.

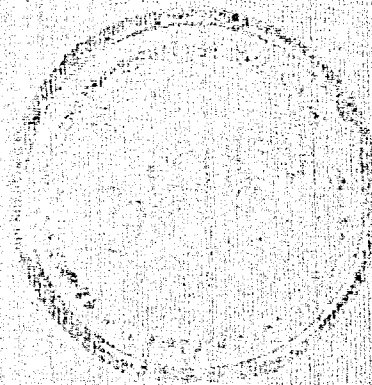
Since my arrival in Madras, I have seen the platform specimens which the commissioners have collected for analysis, and I think that so far as the form, size, and solidity of the crystals is concerned, the salt is inferior to what I found at the salt works when I visited them three or four years ago.

By shallow irrigations, which I have recommended as best for crystallisation, I mean irrigations of a depth of 2½ inches to 3 inches, constantly maintained. These irrigations should not at any time, exceed 28° Beaumé in density. I have at paras 7, 8, 9 and 10 applied the term shallow, to 3-inch irrigations of saturated brine, having in my mind the 12-inch deep irrigations used in France; relatively, however, to ordinary native irrigations, 3-inch irrigations are deep. They are deep or shallow according to the standard of comparison. Absolutely they are the best for salt manufacture on this coast.

If the Government should not agree to undertake manufacture directly by its own officers, I am of opinion that the next best expedient would be to introduce the excise system gradually. The smaller and poorer of the present manufacturers would probably be bought out by the richer ones; but the richer ones would be able to hold on under excise. I do not think that there is any fear of want of healthy competition among the manufacturers under excise.

As regards Madras itself, there would be no fear of a scarcity of salt in the event of the introduction of the excise, as there is a good deal of capital lying idle there: and merchants have already half made up their minds to embark in salt. I was asked by some capitalists who were willing to put two or three lakhs into salt manufacture, to undertake the management of a Limited Liability Company to be got up for that purpose. I have had from other capitalists in Madras more than one overture to the same effect.

There is a large tract of swamp about sixteen or seventeen miles south of Madras on the borders of Cochrane's Canal near Covelong, capable of being utilized for salt manufacture which has been already asked for from the Board of Revenue for the purpose of salt culture. As well as I remember, it is capable of turning out three or four times the quantity of salt now produced at Covelong.



MAP TO ACCOMPANY REPORT OF THE MADRAS SALT COMMISSION 1876.

Scale: 32 Miles = 1 inch

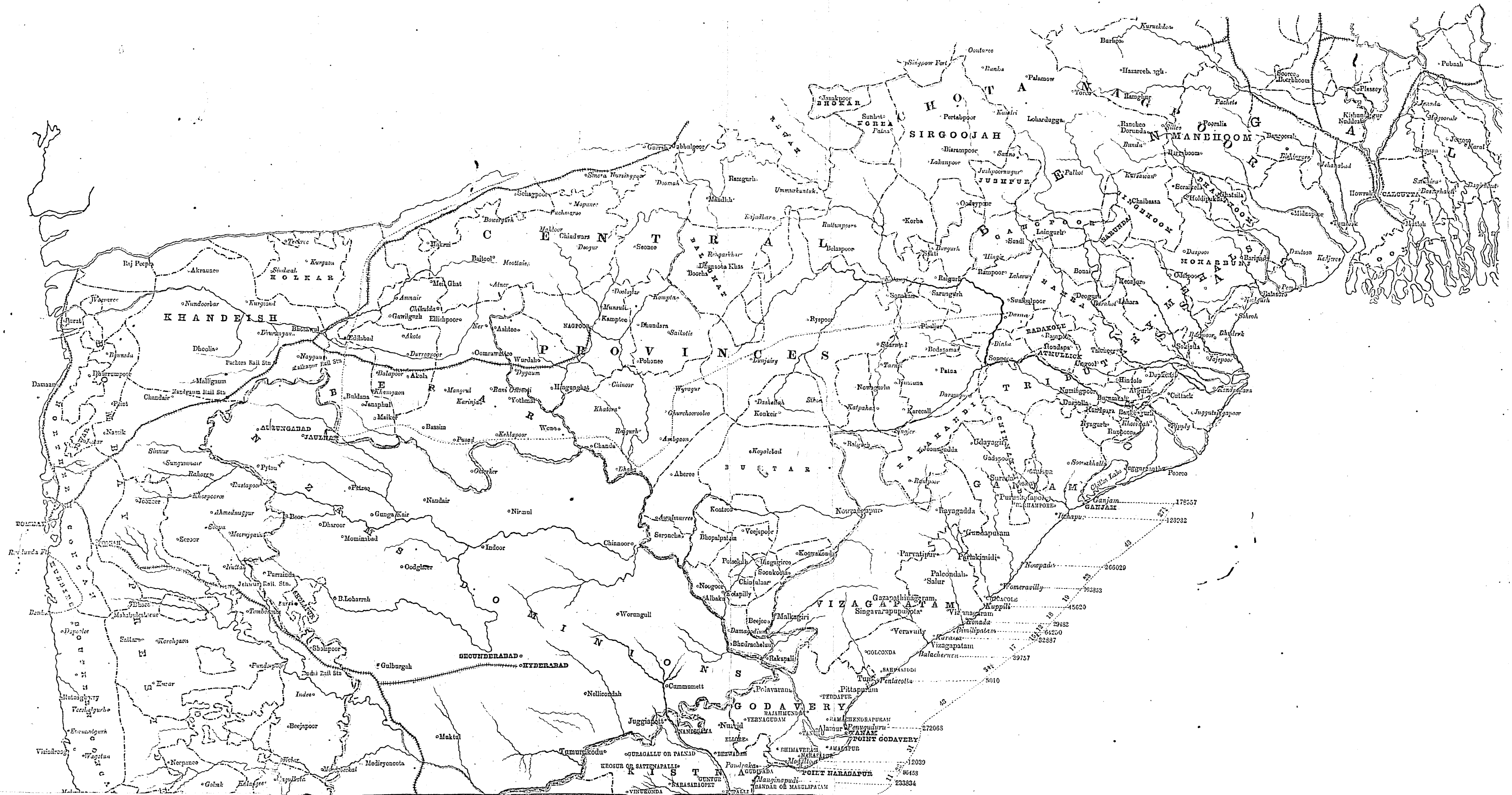
Survey Office
Madras
8th August 1876.



REFERENCE.

- KARASSA Salt Division
- COLOMBA Taluq Station
- VIZAGAPATAM District Boundaries
- Inland Customs Line
- Railway
- District Boundary
- Duty Zone

Photo-Lithographed at the Survey Office Madras
Under the superintendence of Major C. C. Hayward



MAP
TO ACCOMPANY REPORT
OF THE
MADRAS SALT COMMISSION
1876.
Scale 42 Miles = 1 Inch

- REFERENCES
- Colundomptk
 - Sub-Magistrate Stations
 - Tiding Stations
 - Salt Divisions
 - Distict Names
 - Inland Customs Lines
 - Railway
 - Distict Boundary
 - Distance between Salt Depots to Miles
 - Average Sales of Salt in India Islands

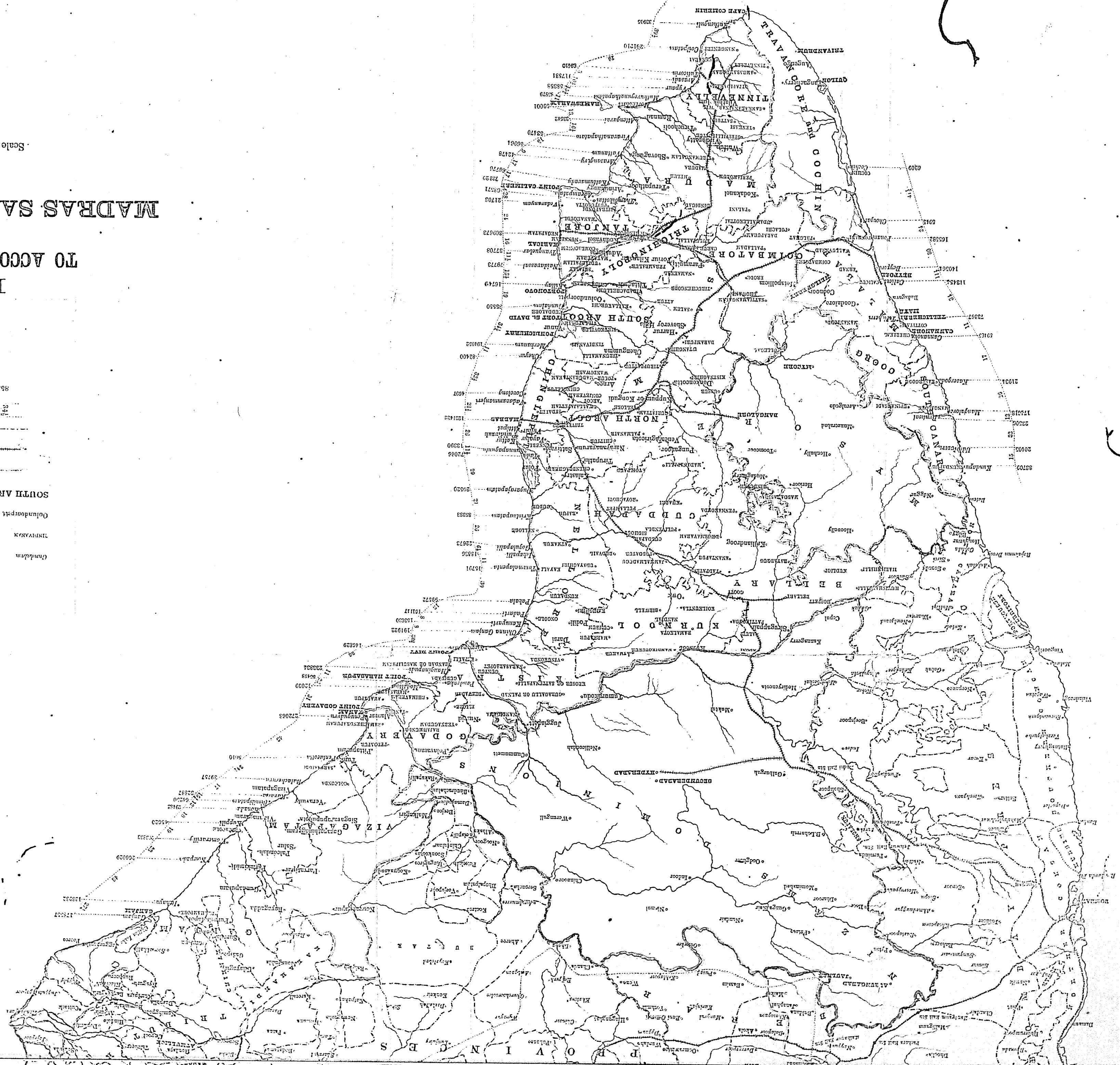
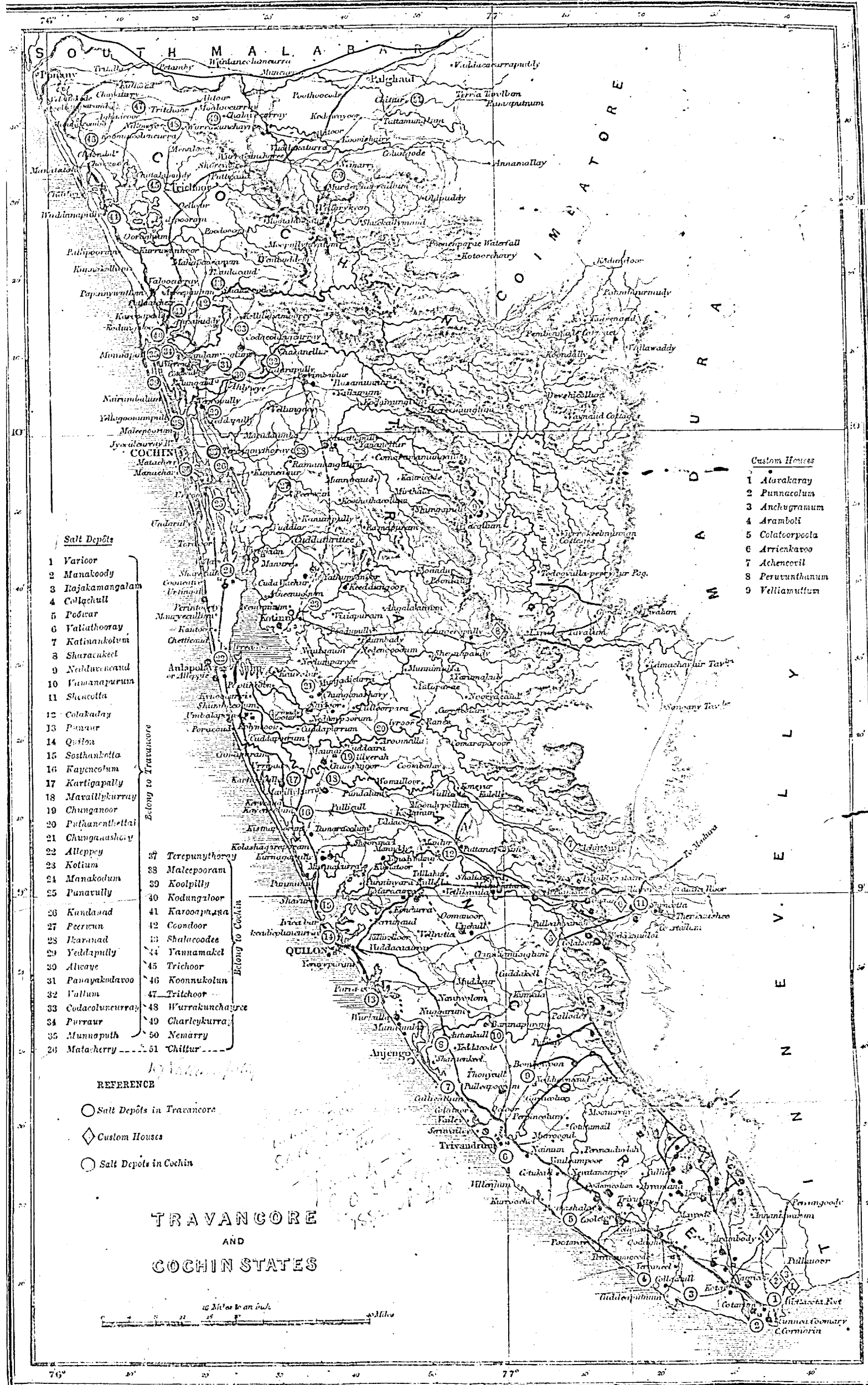


Photo-Lithographed at the Survey Office Madras
Under the superintendence of Major C. S. Sargant



Salt Depôts

- 1 Varloor
- 2 Manacody
- 3 Rajakamengalam
- 4 Collichull
- 5 Pottur
- 6 Valiathooray
- 7 Katinankotam
- 8 Shurankel
- 9 Nedlac road
- 10 Pumanapuram
- 11 Shancetta
- 12 Colakuday
- 13 Pannur
- 14 Quilon
- 15 Sosthanketta
- 16 Kayenceum
- 17 Kartipally
- 18 Marattikuray
- 19 Chinganoor
- 20 Puthantheilai
- 21 Chinganoor
- 22 Alleppey
- 23 Kottam
- 24 Manakodem
- 25 Panavully
- 26 Kundasad
- 27 Perum
- 28 Peranad
- 29 Yeldapully
- 30 Alway
- 31 Panayakandoo
- 32 Vallu
- 33 Codaculacuray
- 34 Puvur
- 35 Munnuputh
- 36 Matasherry
- 37 Terepunthoor
- 38 Malepooram
- 39 Koolpilly
- 40 Kodungloor
- 41 Karoorpuzha
- 42 Coondoor
- 43 Shalacodee
- 44 Tannamakel
- 45 Trichoor
- 46 Koonnukotam
- 47 Trichoor
- 48 Warrakuncha
- 49 Charlekurra
- 50 Nemarry
- 51 Chittur

REFERENCE

- Salt Depôts in Travancore
- ◇ Custom Houses
- Salt Depôts in Cochin

Custom Houses

- 1 Alarakaray
- 2 Punnaculum
- 3 Anchigramam
- 4 Aramboli
- 5 Colatocorpo
- 6 Arriankoo
- 7 Achencoril
- 8 Peruvanthum
- 9 Vellimuttam

**TRAVANCORE
AND
COCHIN STATES**

10 Miles to an Inch