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REPORT

OF THE

MADRAS SURVEY AND LAND RECORDS COMMITTEE

VOLUME I

MADRAS:
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

1915.

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TOUR STATEMENT.

1st to 5th December 1914	Madras.
6th to 10th	„	Tinnevelly.
11th	„	Erode, Coimbatore District.
12th to 15th	„	...	...	...	...	Calicut, Malabar District.
16th and 17th	„	...	...	...	...	Cannanore, Malabar District.
18th to 20th	„	...	...	...	...	Mangalore, South Canara District.
4th to 6th January 1915	...	...	...	...	...	Bellary.
8th to 10th	„	...	...	...	...	Poona.
11th and 12th	„	...	...	...	...	Bombay.
14th to 21st	„	...	...	...	...	Lahore.
22nd to 26th	„	...	...	...	...	Allahabad.
28th to 31st	„	...	...	...	...	Gaya.
1st and 2nd February 1915	...	...	...	...	...	Calcutta.
3rd to 8th	„	...	...	...	...	Chatrapur, Ganjam District.
9th	„	...	...	...	...	Gudivada, Kistna District.
10th	„	...	...	...	...	Madras.

APPENDIX I-B.

LIST OF WITNESSES.

Serial number.	Camp.	Name of witnesses.	Designation.
1	Madras ...	G. Haller, Esq. ...	Director of Land Records, Coorg.
2	Tinnevelly ...	C. G. Todhunter, Esq., I.C.S. ...	Collector of Tinnevelly.
3	Do. ...	D. B. Matheson, Esq., I.C.S. ...	Head-quarters Sub-Collector, Tinnevelly (late Assistant Settlement Officer).
4	Do. ...	M.R.Ry. D. Arulanandam Pillai Avargal ...	Land Acquisition Deputy Collector.
5	Do. ...	" S. Tirumalai Ayyangar Avargal.	Personal Assistant to the Collector of Tinnevelly.
6	Do. ...	" S. Jambunadha Ayyar Avargal ...	Huzur Sarishtadar, Tinnevelly.
7	Do. ...	" P. Appa Rao Pantulu Garu ...	Land Records Superintendent, Group IV.
8	Do. ...	" P. Ramachandra Ayyar Avargal.	Land Records Tahsildar, Tinnevelly.
9	Do. ...	" M. Taj-ud-din Sahib Bahadur ...	Deputy Collector, Koilpatti (late Land Records Tahsildar).
10	Calicut ...	O. A. Innes, Esq., I.C.S. ...	Collector of Malabar (late Settlement Officer).
11	Do. ...	M.R.Ry. Rao Bahadur G. T. Verghese ...	Retired Deputy Collector and formerly Special Deputy Collector for the registration of Jenmam titles.
12	Mangalore ...	M. E. Couchman, Esq., I.C.S. ...	Collector of South Canara (late Settlement Officer).
13	Do. ...	M.R.Ry. C. Gopalan Nayar Avargal ...	Head-quarters Deputy Collector, South Canara.
14	Do. ...	" M. Anantha Nayar Avargal ...	Tahsildar of Mangalore.
15	Do. ...	" H. Sankara Rao Avargal ...	Land Records Tahsildar, South Canara.
16	Bellary ...	A. F. G. Moscardi, Esq., I.C.S. ...	Collector of Bellary.
17	Do. ...	M.R.Ry. T. P. Krishnaswami Sastri Avargal.	Land Records Superintendent, Group II.
18	Do. ...	" I. Ekambara Ayyar Avargal ...	Tahsildar of Bellary.
19	Do. ...	" T. S. Krishnaswami Nayudu Garu.	Land Records Tahsildar, Bellary.
20	Do. ...	" K. V. Subba Rao Garu ...	Tahsildar of Kudligi (late Land Records Tahsildar, Bellary).
21	Chattrapur ...	N. Macmichael, Esq., I.C.S. ...	Collector of Ganjam.
22	Do. ...	B. W. Davies, Esq., I.C.S. ...	Revenue Divisional Officer, Berhampur (formerly Director of Land Records).
23	Do. ...	A. G. Leach, Esq., I.C.S. ...	Special Settlement Officer, Berhampur.
24	Do. ...	M.R.Ry. A. Jagaraya Pillai Avargal ...	Land Records Superintendent, Group I.
25	Madras ...	D. T. Obadwick, Esq., I.C.S. ...	Director of Agriculture (formerly Settlement Officer).
26	Do. ...	T. E. Moir, Esq., I.C.S. ...	Officer on special duty (formerly Settlement Officer).
27	Do. ...	D. G. Hatchell, Esq. ...	Director of Survey.
28	Do. ...	M.R.Ry. V. Mahadeva Ayyar Avargal ...	Officer in charge of the Madras Town Surveys, formerly Land Records Superintendent.
29	Do. ...	" A. B. Vaidyanadha Ayyar Avargal.	First Assistant, Board of Revenue, Settlement Department (formerly Land Records Superintendent).
30	Do. ...	" D. Sesha Acharlu Avargal ...	Assistant Director of Survey (Second Assistant, Central Survey Office).
31	Do. ...	The Honourable Mr. C. E. M. Schmidt ...	Inspector-General of Registration.
32	Do. ...	N. E. Marjoribanks, Esq., I.C.S. ...	Collector of Guntur (formerly Director of Land Records).
33	Do. ...	The Honourable Mr. K. B. V. Krishna Rao.	Zamindar of Polavaram and Additional Member of the Legislative Council.
34	Do. ...	" Mr. B. Narasimheswara Sarma.	High Court Vakil and Additional Member of the Legislative Council.
35	Do. ...	" Mr. V. K. Ramanuja Achariyar.	Late Secretary to the Board of Revenue, Settlement Department, and Additional Member of the Legislative Council.
36	Do. ...	M.R.Ry. J. Venkatanarayana Nayudu Garu.	Assistant Settlement Officer in charge of the preparation of a Record of Rights in South Vallur Estate, Kistna District.
37	Tinnevelly...	Oral statement taken from selected ryots of the Tinnevelly District.	
38	Erode ...	Oral statement taken from selected ryots of Sirkar Chinna Agraharam (Vaiyempalayam), Erode Taluk, Coimbatore District.	
39	Calicut ...	Oral statement taken from selected ryots of Cheviyur Village, Calicut Taluk, Malabar District.	
40	Cannanore ...	Oral statement taken from selected ryots of Chirakkal, Prematti, Cannanore, Karra Valiyur and Manderi Villages, Chirakkal Taluk, Malabar District.	

Serial number.	Camp.	Names of witnesses.	Designation.
41	Mangalore ...	Oral statement taken from four ryots near Mangalore, South Canara District.	
42	Do. ...	Oral statement taken from five other South Canara ryots.	
43	Bellary ...	Oral statement taken from five ryots of Bellary Taluk, Bellary District.	
44	Chatrapur ..	M.R.By. T. Venkatekrishnayya Garu, B.A., B.L.	Vice-President of the Ganjam District Board.
45	Do. ...	Oral statement of fifteen ryots of villages adjoining Chatrapur, Ganjam. Not orally examined.	
46	P.S.P. Rice, Esq., I.C.S.	Collector of Chingleput.
47	A. T. Forbes, Esq., I.C.S.	Do. Anjengo.
48	M. Young, Esq., I.C.S.	Do. the Nilgiris.
49	S. W. G. I. Maciver, Esq., I.C.S.	Do. Anantapur.
50	A. R. Knapp, Esq., I.C.S.	Do. Madura.
51	Diwan Bahadur B. Ramachandra Rao, Esq.	Do. Nellore.
52	R. B. Wood, Esq., I.C.S.	Do. Tanjore.
53	E. B. Elwin, Esq., I.C.S.	Do. Godavari.
54	L. Vibert, Esq., I.C.S.	Do. Trichinopoly.
55	J. M. Turing, Esq., I.C.S.	Do. Kistna.
56	J. B. Huggins, Esq., I.C.S.	Do. Ramnad (late Director of Land Records).
57	F. A. Coleridge, Esq., I.C.S.	Additional Sessions Judge, Coimbatore.
58	E. H. Wallace, Esq., I.C.S.	District and Sessions Judge, Tanjore.
59	J. T. Gillespie, Esq., I.C.S.	Do. Salem.
60	J. W. Hughes, Esq., I.C.S.	Do. Nellore.
61	H. O. D. Harding, Esq., I.C.S.	Do. Trichinopoly.
62	J. G. Burn, Esq., I.C.S.	Do. Madura.
63	H. B. Pate, Esq., I.C.S.	Revenue Divisional Officer, Tuticorin (late Settlement Officer).
64	J. K. Lancashire, Esq., I.C.S.	Revenue Divisional Officer, Hospet (late Settlement Officer).
65	G. T. Boag, Esq., I.C.S.	Special Settlement Officer, Madura.
66	M.R.By. B. Narayanavaradha Nayudu Garu.	Tahsildar of Srivaikuntam.
67	" C. Chandrasekhara Ayyar Avargal.	Do. Tiruchendur.
68	" T. S. Ramaswami Ayyar Avargal.	Do. Nanguneri.
69	" T. S. Subrahmanya Ayyar Avargal.	Land Records Tahsildar, Malabar.
70	" Seshayya Avargal	Special Deputy Tahsildar, Tinnevely.
71	Raja Jaya Vira Rama Venkateswara Ettappa Nayakar.	Zamindar of Ettiyapuram.
72	M.R.By. Chengalvaraya Ayyar Avargal ...	Diwan of Sivagiri.
73	" Sadhu Ganapathy Pantulu Garu...	Yakil, Tinnevely.
74	" M. Ganapathia Pillai Avargal ...	Honorary Deputy Collector, Tinnevely.
75	" M. Arumugam Pillai Avargal ..	Retired Deputy Collector.

APPENDIX I-C.

QUESTIONS CIRCULATED BY THE COMMITTEE.

SECTION I.

1. Is the work of Revision and Resurvey to be carried out hereafter by the Survey Department necessary?

2. Are all the following maps and registers necessary?

Village Maps.

Field Maps, both Village and Taluk sets.

Demarcation Sketches.

Stone Registers.

Can any of these be made more efficient? Can any alterations be effected in any of them with a view to economy? Is a record of measurement necessary? If so, to what standard of accuracy should it attain?

3. A simplified system of Field Survey is being tried in the Punganur Zamindari. Under this system, only one diagonal is measured across each field, all bends on the boundary of the field being offsetted on this diagonal. It is proposed to maintain only the stones at the ends of these main diagonals, in addition to the Village and khandam boundary theodolite stones. Do you consider that this system could be used in ryotwari tracts in future? If so, do you recommend that, in addition, (a) all field trijunctions, (b) all field bends should also be demarcated in the first instance? If so demarcated, should the stones be maintained?

4. In the case of a Survey on the modern Diagonal and Offset System, is it sufficient to maintain only the field trijunction stones and theodolite stations?

5. Are the disadvantages of the Block Map System of Survey, i.e. :—

(1) the absence of an independently plottable field map,

(2) the difficulty of relaying long block lines, in order to replace stones.

(3) the inaccuracies and defects in the existing block maps, sufficiently great to justify the Resurvey of all such areas?

6. Would the saving in maintenance of stones resulting from the use of the Diagonal and Offset or Punganur Systems be sufficient to justify the Resurvey of Districts surveyed on the Triangles System?

7. If only a limited number of stones are to be maintained, should they be set in masonry bases?

8. To what extent (if at all) could the size of Survey Fields be increased, so as to promote economy in demarcation, without loss of utility? Should a distinction be made between wet and dry fields in this connection? Would the economy thus gained in Maintenance justify the expense of a Resurvey?

9. To what extent can economy be effected in surveying and mapping the boundary of a Survey Field, without loss of efficiency? Are bends in the boundaries of fields being mapped with an unnecessary degree of minuteness?

10. Is the registration of all Subdivisions, however small, an essential part of the ryotwari system? Can you suggest any practical way of curtailing trouble and expense under this head? To what extent would the same arguments apply to the plotting, mapping and demarcation of such Subdivisions?

11. Are there any cases in which it would be safe to leave porambokes unmapped or undemarcated? Can the Village Officers or the more wealthy and influential ryots of a Village be trusted to protect communal interests (e.g., grazing grounds) or public interests (e.g., river courses) against encroachments? Should the rule that Subdivisions need not be demarcated apply to Subdivisions which form porambokes?

12. At present, field maps and the measurements shown therein enable Village Officers to show a ryot the boundaries of his field and to demarcate and register Subdivisions. Are these objects worth the expense of Survey and Maintenance? If so, can you suggest any more economical method of Survey by which the same objects could be attained?

13. Would it be possible to curtail the time spent by Survey Officers in hearing objections and the amount of travelling involved? Are the arrangements under this head the most systematic ones of which the circumstances admit?

14. Can speed and economy in survey be increased by any change in the number and qualifications of the existing Establishments of Survey Field Parties or in the character and amount of supervision?

15. At present, the cost of Survey and Maintenance is distributed as follows between individual landholders and the general tax-payer:—

(1) *During Survey*.—The cost of demarcation stones and cooly labour is paid by the landholders whose fields are surveyed. The cost of measurement, mapping and general supervision is borne by the general tax-payer.

(2) *During Maintenance*.—The cost of renewing missing stones, including the cooly labour involved, is borne by individual landholders. In addition, some of the cost of the Maintenance Staff is borne by landholders, under the head of fees payable for the "time and labour of the Land Records Staff." The remainder of the cost of the Supervising Staff, as also the full cost of measuring and mapping new Subdivisions and revising patta registration, is borne by the general tax-payer.

Do you consider this a fair arrangement? If not, what apportionment of cost would you suggest between:—

- (1) The individual landholder.
- (2) The Village as a whole.
- (3) The general tax-payer.

16. During the course of Maintenance, many flagrant instances have been noticed in which boundary marks have been wilfully removed by ryots, to the detriment of communal interests. Do you consider that these cases can be adequately dealt with under the existing law? If not, what remedy would you suggest? Do you consider that the power of inflicting fines summarily in such cases should be given to any particular class or classes of Land Records Officers? If so, under what safeguards?

17. Do you consider that it is necessary to map all the topographical details shown on pages 202—205 of the Board's Standing Orders, Volume II? What limits, if any, should there be to the mapping of Field Channels?

SECTION II.

1. To what extent can the Maintenance of land records and maps by the Revenue Staff (including the Land Records Establishment) be simplified and rendered more efficient?

2. Is Maintenance, as carried out under the existing rules, a complete substitute for periodical Revision Surveys or can it be made so? Would you prefer a system of strict Maintenance or a system of periodical and thorough overhauling by the Survey Department (Revision Survey)?

3. Do you consider (a) the Maintenance of Survey Marks, (b) the marking of new Subdivisions should be done by Firka Revenue Inspectors or by Special Officers, such as Land Records Inspectors, it being understood that the charges of Firka Revenue Inspectors would be proportionately reduced, if their work were increased?

4. Would you allow Karnams to club Subdivisions? If so, would it be safe to allow them, as part of the process, to erase the Subdivisions in the registers? Can this difficulty be got over? Should the Land Records Inspector check clubbings in the same way in which he checks Subdivisions?

5. Do you consider that the present rules and practice regarding the Survey and Acquisition of lands under Act I of 1894 can be improved, in the interests of efficiency, convenience and economy of Maintenance or otherwise?

SECTION III.

1. Are any steps practicable and desirable, in order to make the Land Revenue Registry a more accurate representation of facts?

2. Do the deficiencies in the present system result in serious administrative drawbacks? Do they impede the collection of revenue?

3. Do the deficiencies result in any injustice to the ryot? Do they form the subject of complaint?

4. Would the ryot welcome a system of compulsory registration of transfers of land? Would the imposition of penalties for failure to register be effective? Would it be practicable? Would it arouse resentment?

5. Should Officers of the Registration Department be made to insist on the production of (1) a patta in the name of the applicant, (2) a certified map of the land, as a preliminary to registration of deeds affecting land?

6. Should a certified map of the land accompany the delivery of possession in pursuance of a Civil Court Decree?

7. Should Officers of the Registration Department supply the Revenue Department with abstracts of all registration transactions affecting land?

8. Should Decrees of Civil Courts which involve alterations of Survey Boundaries be executed by the Land Records Staff, instead of by the Court Amin, as at present?

9. Would registration be stimulated by making an entry in a patta *presumptive* evidence of title? (Section 4, Clause 2, of the Evidence Act.) Would the existence of such a rule substantially strengthen the position of a pattadar in suits affecting title?

10. Would it be feasible to make an entry in a patta *conclusive* proof of title? (Section 4, Clause 3, of the Evidence Act.) What preliminaries would you suggest, in order to prevent such a rule from causing injustice and disappointment to individuals?

SECTION IV.

1. Can you suggest any method of improving the present system of granting pattas ?
2. Even if registration were perfected, a patta would not always be a complete statement of the liabilities of an individual. This is due to the fact that the same individual may possess :—
 - (a) lands in several Villages,
 - (b) shares in several joint pattas,
 - (c) Inam lands, enfranchised or unenfranchised, the dues on which are not shown in his patta.

Is it feasible to give each individual a patta, containing a complete statement of his dues to Government ?

SECTIONS V AND VI.

1. Can the Maintenance of Land Records be best performed (1) by the Establishment, as now constituted, (2) by members of the Land Revenue Establishment working under the Collector (Assistant Superintendents of Land Records having the position of Special Deputy Collectors), (3) by a separate Department working under the Director of Land Records (Deputy Surveyors taking the place of Land Records Inspectors and perhaps Special Assistant Karnams being appointed exclusively for land records work), (4) as part of the work of the Survey Department (Surveyors, Deputy Surveyors, Assistant Surveyors, etc., performing the duties of the present Establishment).
 2. Does Maintenance suffer technically through being performed by an agency other than the Survey Department ?
 3. Is it advantageous that the Maintenance Staff should be under the Collector ?
 4. Do the present arrangements cause unnecessary friction ? How would this aspect of the question be affected by the adoption of any of the alternatives suggested above ?
 5. How should the Maintenance Staff be recruited and trained ?
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APPENDIX II-A.

MEMORANDUM ON THE MADRAS SURVEY DEPARTMENT.

I agree in the main with the opinions expressed by my *locum tenens*, Mr. W. A. Hasted, in his "Memorandum on the Madras Survey Department." The points on which I differ from him or which I am desirous of amplifying are as follows:—

I. Recruitment.—I would confine recruitment of the European cadre to graduates of the English, Scotch or Irish Universities who have taken an honors degree in Mathematics. It is from this class that the Forest Department and to a certain extent the superior Revenue Establishment of Indian State Railways and, if I am not mistaken, the Egyptian Survey Department are now recruited, and I believe the supply is greatly in excess of the demand. The choice of candidates I would leave to a Selection Committee appointed by the Secretary of State in Council. The standard of physical fitness should be as high as that of the Forest Department. I would confine recruitment of the appointments reserved for Indians to Upper Subordinates (Sub-Assistants) of the department. There is no gainsaying the fact that an out-of-door life is not congenial to the *average* Indian graduate, and that the Indian is sooner rendered unfit for hard work in the field than the European through his aging more rapidly. The Indian is in his element in an office and generally renders excellent service. A degree in Engineering would be wasted on a Survey Officer and no degree is any criterion of an Indian's value as a Survey Officer. This can be gauged only by his conduct of his duties in the Upper Subordinate grades of the department.

II. Training and probation.—I am in full agreement with Mr. Hasted in considering that the present system of training is faulty. Ten months' training in Survey is insufficient to make the average Probationer an efficient Assistant to the Officer in charge of a Survey Party, but owing to the exigencies of the service he has more than once been required to *hold charge* of a Survey Party! If in future, recruitment for the European cadre is confined to graduates, I would require the selected candidates to undergo a course of Survey at the Ordnance Survey Office, Southampton. I doubt they would be able to satisfy the Surveyor-General of the Ordnance Survey as to their general knowledge of Survey in less than a year. As a rule, it takes a student at the Royal Geographical Society's head quarters longer than this to obtain the Society's diploma, but few of them, I believe have had the advantage of a 'Varsity education.'

III. Conditions of Service.—There is no exaggeration whatever in Mr. Hasted's description of the very bad conditions now prevailing in the department. They could hardly be worse! The impossibility of the task imposed on Survey Officers is not only destructive of their peace of mind, but of economy also. This I have repeatedly urged since I took charge of my office 13 years ago, but to no effect. It is generally recognized that to get the best out of the low paid Indian employee, Civil or Military, adequate European supervision is a *sine qua non*. There is a greater efficiency, greater desire to please, and a general spirit of *esprit-de-corps* amongst the rank and file when they know their European Officers and realize that they are known to them. In the Survey Department, as at present constituted, it is impossible for the European Officer in charge of a Survey Party, comprising 200 to 300 low paid subordinates in office and field, unaided by an Assistant, to know his men as he should and to exercise the supervision they require. He has in consequence to leave much undone that should, be done and to rely on the reports of his upper subordinates, some of whom are not free from bias, and create disaffection. The system of Survey adopted in this Presidency and necessitated by its Revenue Administration is much more complicated than that of any other province. A high standard of accuracy is insisted upon, but at the same time exception is taken to the cost of the survey. This is dependent to some extent on the individual efforts of the surveyors. While idlers and inaccurate workers are put under stoppages of pay, the progress of the survey is delayed and its rateable cost increased as the supervisory charges are irreducible. The only way in my opinion to effect these desiderata is to give the officer in charge of each Party an Assistant.

IV. Conditions of Salary.—The conditions of salary ruling in the department are clearly indicated in the accompanying tabulated statement in which the rate of promotion at present obtaining in the Survey and 3 other departments is compared. The 6 Survey Officers, whose service in each grade is averaged are, excepting myself, all that remain of those who joined the department prior to the changes effected in the cadre in 1891 and 1905. I have excluded myself, as my fortune has been so good that it would be destructive of the presentation of the real prevailing conditions under which the other 6 officers are labouring to include in the averages the figures that pertain to me. It has not been possible to calculate what additional amounts officers have received on account of acting or sub *pro tem*. promotions, but this I believe will not affect to any appreciable extent the *relative differences* in the average salary of an officer of each of the four services. The figures from which were calculated the average service of a Survey and a Police Officer on promotion to each grade, as also of officers of the other 2 services in the grades on Rs. 1,500 and upwards were obtained from the Madras Quarterly Civil List corrected up to 1st October 1913 and from the classified list of the State Railway Establishment corrected up to 31st December 1912. It will be seen that though Police officers have fared badly as compared with the officers of the Forest, and Traffic Department of State Railways, the lot of the Survey officers has been infinitely worse, *e.g.*, one of the 6 officers with upwards of 21 years' service is still on Rs. 550 only, 2 with upwards

APPENDIX II-A.

MEMORANDUM ON THE MADRAS SURVEY DEPARTMENT.

I agree in the main with the opinions expressed by my *locum tenens*, Mr. W. A. Hasted, in his "Memorandum on the Madras Survey Department." The points on which I differ from him or which I am desirous of amplifying are as follows:—

I. Recruitment.—I would confine recruitment of the European cadre to graduates of the English, Scotch or Irish Universities who have taken an honors degree in Mathematics. It is from this class that the Forest Department and to a certain extent the superior Revenue Establishment of Indian State Railways and, if I am not mistaken, the Egyptian Survey Department are now recruited, and I believe the supply is greatly in excess of the demand. The choice of candidates I would leave to a Selection Committee appointed by the Secretary of State in Council. The standard of physical fitness should be as high as that of the Forest Department. I would confine recruitment of the appointments reserved for Indians to Upper Subordinates (Sub-Assistants) of the department. There is no gainsaying the fact that an out-of-door life is not congenial to the *average* Indian graduate, and that the Indian is sooner rendered unfit for hard work in the field than the European through his aging more rapidly. The Indian is in his element in an office and generally renders excellent service. A degree in Engineering would be wasted on a Survey Officer and no degree is any criterion of an Indian's value as a Survey Officer. This can be gauged only by his conduct of his duties in the Upper Subordinate grades of the department.

II. Training and probation.—I am in full agreement with Mr. Hasted in considering that the present system of training is faulty. Ten months' training in Survey is insufficient to make the average Probationer an efficient Assistant to the Officer in charge of a Survey Party, but owing to the exigencies of the service he has more than once been required to *hold charge* of a Survey Party! If in future, recruitment for the European cadre is confined to graduates, I would require the selected candidates to undergo a course of Survey at the Ordnance Survey Office, Southampton. I doubt they would be able to satisfy the Surveyor-General of the Ordnance Survey as to their general knowledge of Survey in less than a year. As a rule, it takes a student at the Royal Geographical Society's head quarters longer than this to obtain the Society's diploma, but few of them, I believe have had the advantage of a 'Varsity education.'

III. Conditions of Service.—There is no exaggeration whatever in Mr. Hasted's description of the very bad conditions now prevailing in the department. They could hardly be worse! The impossibility of the task imposed on Survey Officers is not only destructive of their peace of mind, but of economy also. This I have repeatedly urged since I took charge of my office 13 years ago, but to no effect. It is generally recognized that to get the best out of the low paid Indian employee, Civil or Military, adequate European supervision is a *sine qua non*. There is a greater efficiency, greater desire to please, and a general spirit of *esprit-de-corps* amongst the rank and file when they know their European Officers and realize that they are known to them. In the Survey Department, as at present constituted, it is impossible for the European Officer in charge of a Survey Party, comprising 200 to 300 low paid subordinates in office and field, unaided by an Assistant, to know his men as he should and to exercise the supervision they require. He has in consequence to leave much undone that should, be done and to rely on the reports of his upper subordinates, some of whom are not free from bias, and create disaffection. The system of Survey adopted in this Presidency and necessitated by its Revenue Administration is much more complicated than that of any other province. A high standard of accuracy is insisted upon, but at the same time exception is taken to the cost of the survey. This is dependent to some extent on the individual efforts of the surveyors. While idlers and inaccurate workers are put under stoppages of pay, the progress of the survey is delayed and its rateable cost increased as the supervisory charges are irreducible. The only way in my opinion to effect these desiderata is to give the officer in charge of each Party an Assistant.

IV. Conditions of Salary.—The conditions of salary ruling in the department are clearly indicated in the accompanying tabulated statement in which the rate of promotion at present obtaining in the Survey and 3 other departments is compared. The 6 Survey Officers, whose service in each grade is averaged are, excepting myself, all that remain of those who joined the department prior to the changes effected in the cadre in 1891 and 1905. I have excluded myself, as my fortune has been so good that it would be destructive of the presentation of the real prevailing conditions under which the other 6 officers are labouring to include in the averages the figures that pertain to me. It has not been possible to calculate what additional amounts officers have received on account of acting or *sub pro tem*. promotions, but this I believe will not affect to any appreciable extent the *relative differences* in the average salary of an officer of each of the four services. The figures from which were calculated the average service of a Survey and a Police Officer on promotion to each grade, as also of officers of the other 2 services in the grades on Rs. 1,500 and upwards were obtained from the Madras Quarterly Civil List corrected up to 1st October 1913 and from the classified list of the State Railway Establishment corrected up to 31st December 1912. It will be seen that though Police officers have fared badly as compared with the officers of the Forest, and Traffic Department of State Railways, the lot of the Survey officers has been infinitely worse, e.g., one of the 6 officers with upwards of 21 years' service is still on Rs. 550 only, 2 with upwards

of 26 and 20 years' service on Rs. 750 and 2 with upwards of 29 and 28 years' service on Rs. 900 and one only with close on 30 years' service on Rs. 1,100. In the event of his seniors remaining in service until they reach the age of 55 years, Mr. Lushington cannot get Rs. 900 until 17th November 1917 the date on which Mr. MacHutchin must retire, and even then he will not be able as he will reach the age of 55 on 14th July 1920, to put in 5 years' service in that grade to entitle him to full pension in spite of the 33 years' service—all but 3 weeks—which he will then have to his credit. It is clear therefore that the graded system of pay has worked much hardship in the Survey Department. If any further evidence of this is required, it is to be found in the last column of the statement which shows that the average annual emolument of a Survey Officer during the first 20 years of his service were £325 per annum as against an average of £589 in the other 3 services or 45 per cent. less. Further calculations on the same basis show that the average emoluments in 20 years of the same 6 Survey Officers was less by Rs. 35,417 or £2,361 than that received by all the 9 retired, or deceased, Civilian Officers who served in the Department since its creation in 1858, with the exception of the late Mr. G. P. Greene who is excluded for the reason that he, like me, was exceptionally fortunate in rising to the head of the Department some years before he had completed 20 years' service. The necessity and equity of an incremental system of pay has been recognized by the Secretary of State and adopted in all the uncovenanted services except the Survey and the Police, which the tabulation statement clearly shows are in urgent need of it too.

The incremental scale of pay recommended by Mr. Hasted is much the same as that adopted for the Forest and Public Works Departments and is calculated to give the Survey Officer a salary of Rs. 1,250 per mensem when he reaches his 20th year of service. Thereafter his chance of further promotion is less than that of the Forest or Public Works Department Officer, who have 5 and 9 appointments rising to Rs. 1,900 and 2,750 respectively to look forward to, as against his one appointment on Rs. 1,800, since reduced to Rs. 1,400 for future incumbents. This reduction of salary is quite unjustifiable as the difference of Rs. 300 between the pay of the Deputy Director, 1st class, and the future *maximum* pay of the Director is not only not commensurate with the heavier work and responsibilities of the latter officer but does not cover the additional cost of residence at the Presidency town. Nothing less favourable than the incremental scale recommended by Mr. Hasted can in justice be granted to the 6 Survey Officers whose lot as compared with that of their contemporaries in the Police who were recruited in the same way and from the same class, or with that of officers of the other 2 services or even with past officers of their own service, has been so hard. It is the only fair scale for European Officers for whom conditions of life in India are gradually getting harder, and I feel sure it will attract men of the best 'Varsity education. It is possible that in their ignorance of conditions of life in India, they would accept a lower scale of salary, but it would be impolitic to offer it, as in the course of time it would be the cause of complaint or dissatisfaction. The scale of pay recommended by Mr. Hasted for Indian Officers is slightly higher than that now obtaining in the Public Works and Forest Departments. Though I see no reason why it should be so, I am quite averse to any less favourable scale than that now obtaining or that may hereafter be adopted in the other 2 services. Though the liability of the European and Indian Survey Officer to injury to his health through frequent attacks of malaria may be less than that of his *colleagues* in the Forest Department, he has to undergo just as much exposure to the elements and must necessarily have more office work owing to the much larger establishment he has to control and to the closer scrutiny of details which his work demands. I would however strongly recommend a higher rate of increment, *i.e.*, Rs. 80 as a special concession to Mr. T. A. Sundaram Ayyar in consideration of the fact that he has been acting in the gazetted grades almost continuously since 1904 and could not be confirmed for want of a permanent vacancy until 20th October 1911, when he had reached the 48th year of his age. He has rendered exceptionally good service and it would be distinctly hard that he should suffer a large reduction in his pension as he will do, if not given the higher incremental rate of Rs. 80 from the date of his confirmation until the 30th November 1918 when he will reach the age of 55. I quite agree with Mr. Hasted that the Land Records Superintendents should not be included in the Survey cadre. Those of them who are Ex-Tahsildars and have undergone only 6 months' training in Survey are quite unfit to hold the appointment of an Officer in the Survey Department.

V. Conditions of leave.—I am in full agreement with all that Mr. Hasted has said on this subject. Sanction to accumulate privilege leave up to 6 months and to commute furlough into privilege leave in the ratio of 2: 1 up to a maximum absence at one time of nine months on full pay would be a great boon to many a married European Officer who is debarred from taking furlough, of which he may be in urgent need, owing to his inability to maintain himself and his family in Europe on half pay. It would also be very beneficial to all grades of Indian employees who are generally precluded from taking long leave, of which they are in need, for the same reason.

VI. Conditions of pension.—Under Chapter XIX, article 474, Civil Service Regulations, Survey Officer cannot obtain any pension at all until he has completed 30 years' service whereas Officers of the Public Works, Forest and Telegraph are, eligible not only for a proportionate pension of £350 after 20 years' service but to full pension of £437-10 after 25 years. It is generally understood that the Commission which in 19th February 1903 enquired into the conditions of service in the Police were strongly of opinion that 30 years' service was much too long and even went to the extent of recommending compulsory retirement of the whole Force-officers and men—after 25 years' service.

There is no need to make retirement compulsory after 25 years' service in the Survey, but it should certainly be optional as in the Public Works Department and Forest services. Few will avail themselves of the concession but the feeling that they are not tied down to 30 years of service in India will give to their outlooks towards the future a more roseate hue. It is better for the service that the few who elect to retire on completion of 25 years' service should not be compulsorily detained for a further 5 years as they are likely to feel they are working more for their pension than for Government. The invalid pension after 20 years' service should certainly be increased from one-third

to one-half of the average emoluments of the last 3 years of service rendered. I altogether disagree with Mr. Hasted that the maximum pension for Europeans and Indians should be £500 and Rs. 5,000. It should be £600 and Rs. 6,000 in consideration of the fact that the scale of pension was fixed as long ago as 1855 when £500 was the equivalent of Rs. 5,000. The present pension of £437-10 at the rate of *1s. 9d.* per rupee is therefore £62-10-0 less than it was 59 years ago! In consideration of the totally different conditions of service and the high cost of living now prevailing, the equity of an addition to the pension of £100 in Europe or Rs. 1,000 in India cannot be disputed. The appointment of Director of Survey is not one of those enumerated in Article 475 of Chapter XIX of the Civil Service Regulations and it certainly should be added. The distinction made thereby between the Director of Survey and a Deputy Inspector-General of Police and Conservator of Forests is invidious. In any case, my salary for the past 8 years has been more than that of five of the 8 officers of the Police and Forests now eligible for the additional pension of Rs. 1,000 a year. As pointed out *supra* under "*conditions of salary*" the reduction of the pay of the Director of Survey from Rs. 1,500-1,800 to Rs. 1,200-1,400 was quite uncalled for, as there has been no diminution in his duties and responsibilities, but rather an undoubted increase which is bound to continue.

Though I failed to touch on Mr. Hasted's remark in paragraph IV *supra* re the relative expenses of European and Indian Officers, and since I have recommended a maximum pension of Rs. 6,000 for the Indian Officer which the existing code method of calculating pensions on the basis of the salary drawn during the last 3 years of service will not allow of if the highest salary allowed to the Indian is fixed at Rs. 900, I must explain the discrepant figures. There is no doubt that the increase in the expenses of the Indian Survey Officer, through the rise in the cost of house rent and food stuffs, etc., is, as in the case of the European Officer, out of all proportion to any increase of salary he has received in the past. The Indian, though his standard of living is less expensive than that of the European, is burdened with many social and family liabilities, *e.g.*, the marriage of all his daughters and the provision of a dowry for each of them and the housing and feeding of sometimes a host of needy distant relatives, who from the European point of view have really no claim on him. In course of time the Indian no doubt will shake himself free of these encumbrances and should then be much better off on Rs. 900 per mensem than the European on Rs. 1,250. He cannot legitimately claim the same pay, at any rate, if recruited in India, as every man who leaves his native land for foreign parts expects to be well remunerated for so doing. I am of opinion that a maximum pension of Rs. 500 per mensem is none too high, though about Rs. 84 more than he is entitled to according to the present code rules for an Indian who has served for three years in the highest grade on Rs. 900 per mensem.

VII. *Limitation in the employment of non-Europeans.*—The ideal Survey Officer is one who is more in his element out-of-doors than at his office table. For this reason and because the average Indian ages more rapidly, I agree with Mr. Hasted that the number of Indian officers should be limited to one-third and I would employ the majority of them in office.

I quite agree with Mr. Hasted's remarks in paragraph VIII and consider the reasonableness of his claim in paragraph IX indisputable.

24th January 1914.

D. G. HATCHELL,
Director of Survey, Madras.

AVERAGE service of an officer on promotion to each grade.

Department.	Rs. 800	Rs. 400	Rs. 425	Rs. 450	Rs. 500	Rs. 550	Rs. 700	Rs. 750	Rs. 800	Rs. 900	Rs. 1,000	Rs. 1,100	Rs. 1,200	Rs. 1,350	Rs. 1,500	Rs. 1,700	Rs. 1,800	Rs. 1,900	Rs. 2,000	Approximate average emoluments received by an officer during the first twenty years of his service calculated on substantive pay, and not excluding periods spent on furlough and medical leave.
POLICE. ... (37 Officers)	...	1·8 (14 officers)	...	...	4·7 (14 officers)	...	8·3 (9 officers)	...	10·8 (7 officers)	15·7 (11 officers)	20·9 (5 officers)	...	24·5 (3 officers)	...	21·6 (3 officers)	...	28·8 (2 officers)	...	...	Rs. 1,56,402 or £522 per annum.
SURVEY ... (6 Officers)	4 (6 officers)	...	6·75 (6 officers)	...	...	15 (6 officers)	...	18·5 (5 officers)	...	21·5 (2 officers)	...	22·6 (1 officer)	...	...	...	...	...	...	...	Rs. 97,402 or £325 per annum.
FORESTS E ... (31 Officers)	...	15	2·1	...	8	5·3	8·4	9·4	10·4	12·4	14·4	16·4	18·4	19	23 approximate. (1 officer)	28·2 (3 officers)	...	29·3 (1 officer)	...	Rs. 1,04,640 or £ 640 per annum.
TRAFFIC DEPT. STATE RY. F. (80 Officers) excluding 10 administrative officers on 1,350 to 2,000 Rs. and about a dozen Probationers on 200 to 300 Rs.	...	2	...	4	...	6	8	...	10	12	14	16	...	...	26·1 (3 officers)	...	...	...	28·1 (3 officers)	Rs. 1,78,300 or £ 596 per annum.

N. B.—Those officers of the Police, Forests, and Traffic Departments who have risen from the ranks and whose service is therefore abnormal are excluded.

A Mr. Bateman whose service to date is 21 years 2 months and 11 days is still on Rs. 550.

B Messrs. Lushington and Gomperts whose services to date are 26 years 5 months and 23 days and 20 years 9 months and 20 days respectively are still on Rs. 750.

C Messrs. Hasted and Mullins with services to date of 29 years 2 months and 7 days and 28 years 2 months and 16 days respectively are still on Rs. 900.

D Mr. MacHutchin excluded, as the grade on Rs. 300 was created after he was promoted to Rs. 425.

E Promotions from 380 Rs. to 1,350 Rs. automatically by increments of 40 or 50 Rs. annually; thereafter by vacancies and selections. The averages therefore are not actuals, but approximate and are shown for comparative purposes only.

F Two classes (comprising 8 grades from 400 to 1,100 Rs.) of District Officers and one class (3 grades from 1,250 to 2,000 Rs.) of administrative Officers. Promotions from class to class is by vacancy and selection, but from grade to grade automatically every two years. Royal Engineer Officers are excluded.

APPENDIX II-B.

EXTRACT from Demi-official letter No. 182, dated 15th February 1915, from Colonel T. F. B. Renny-Tailyour, c.s.i., R.E., Superintendent, Southern Circle, Survey of India.

* * * * *

2. From my experience up to date I consider that the material supplied to the Survey of India by the Madras Survey department is in most places very reliable and it is also very useful for it enables us to undertake, in the plains of Madras, supplementary survey instead of original survey. I consider that the gain to the Survey of India, on account of increased outturn is greater than the amount we have to pay to the Madras Survey department for their material and, as our surveyors get accustomed to supplementary survey, this gain should increase.

* * * * *

APPENDIX II-C.

STATEMENT showing average size of a survey field and the intensity of demarcation in the several districts of the Madras Presidency.

Name of districts.	Area of assessed land.			Number of survey fields.	Number of survey marks.	Number of survey marks per acre.	Number of survey marks per field.	Average size of a survey field.	Percent age of wet to total area.
	Wet.	Dry.	Total.						
	ACRES.	ACRES.	ACRES.					ACRES.	
Anantapur ...	121,780	2,281,586	2,353,296	391,234	1,421,780	60	3.6	6.0	5.1
Arcot, North ...	260,185	961,814	1,221,999	422,982	1,975,313	1.6	4.7	2.9	21.0
Arcot, South ...	341,814	1,266,560	1,608,374	726,159	2,921,872	1.8	4.0	2.2	21.0
Bellary ...	48,218	2,216,722	2,264,935	806,374	1,067,711	47	3.5	7.3	2.1
Oenars, South ...	422,680	1,810,331	2,233,011	97,560	1,019,121	46	10.4	22.8	18.0
Chittoor ...	62,847	525,374	608,221	318,063	1,754,772	2.9	5.5	1.9	13.6
Coimbatore ...	78,878	2,585,353	2,664,228	438,026	1,654,452	62	3.8	6.1	3.0
Cuddapah ...	70,049	1,228,015	1,298,064	473,791	1,854,845	1.4	4.0	2.8	5.4
Ganjām ...	205,786	238,582	444,348	346,426	1,705,360	3.9	5.0	1.8	46
Godāvari ...	174,248	312,360	486,608	140,720	566,566	1.2	4.1	3.5	35
Guntūr ...	266,711	2,123,369	2,390,080	466,985	1,244,736	52	2.5	4.9	11
Kistna ...	368,371	790,852	1,159,223	251,301	897,998	77	2.8	4.6	32
Kurnool ...	54,274	2,608,152	2,662,426	436,919	1,606,089	61	3.7	6.0	2.0
Madura ...	176,131	1,061,302	1,237,433	442,048	1,780,338	1.44	4.1	2.8	14.5
Malabar ...	553,507	2,107,108	2,660,610	293,031	2,019,630	76	7.0	9.2	21
Nellore ...	228,163	1,246,929	1,475,092	328,638	1,091,834	74	3.3	4.5	15
Nilgiris, The ...	...	216,956	216,956	19,055	140,429	64	7.4	11.4	...
Rāmnād ...	26,754	292,017	318,771	126,302	418,504	1.3	3.3	2.5	8.4
Salem ...	87,369	1,367,849	1,455,218	450,510	1,411,048	97	3.1	3.2	6.0
Tanjore ...	778,885	414,142	1,193,027	385,315	2,361,472	2.0	6.1	3.1	66
Tinnevely ...	181,156	1,081,696	1,262,852	365,533	1,214,935	96	3.3	3.4	14
Visagapatam ...	58,228	111,495	169,723	65,672	354,419	2.1	5.4	2.6	34
Trichinopoly ...	168,986	1,594,917	1,763,903	333,678	1,454,903	82	4.4	5.3	9.7
Chingleput ...	352,021	404,496	756,517	415,522	1,771,315	2.3	4.3	1.8	46
Total ...	5,107,011	28,800,502	33,907,513	6,061,869	33,699,217	1.0	4.2	4.2	15.1

APPENDIX II-D.

STATEMENT showing the history of survey and maintenance in the several districts of the Madras Presidency.

Name of districts.	Taluks.	System of existing survey.	Date of original survey.	Date of resurvey or revision survey.	Date of commencement of maintenance on modern lines.	Total surveyed area in square miles.	Remarks.
Ganjām ...	Berhampore ...	Triangles.	1872—1880	1908—1910	1918—1915	1,272	To be maintained.
	Chatrapur ...						
	Chiscole ...						
Visagapatam ...	Aaka ...	Triangles.	1886—1888	...	1910	421	To be maintained. To be resettled without resurvey.
	Goomsur ...						
	Palakonda ...						
Godāvāri ...	Eleven villages of Sarvasiddhi.	Diagonal and fset.	1888	1911	1915	127	Resurveyed owing to loss of records.
	Sixty-four villages of Sarvasiddhi.	Diagonal and off-set.	1862	1896	1914—1915	727	To be maintained (subject to further scrutiny).
	Rajahmundry ...						
Kistna ...	Peddapur ...	Block map.	1861—1862	1894	Cannot be maintained.	819	To be resurveyed owing to inaccuracies in resurvey records (G.O. No. 1420, Revenue, dated 15th May 1914).
	Polavaram ...						
	Yellavaram ...						
Guntūr ...	Chodavaram ...	Diagonal and off-set.	1868—1868	1896—1898	1918—1914	1,186	To be maintained (subject to further scrutiny).
	Essole ...						
	Amalapuram ...						
Anantapur ...	Ramachandrapur ...	Block map.	1862—1865	1898—1894	Cannot be maintained.	1,889	To be resurveyed owing to inaccuracies in survey records (G.O. No. 2592, Revenue, dated 7th September 1914).
	Cocanada ...						
	Ellore ...						
Bellary ...	Nandigama ...	Diagonal and off-set.	1867	1896	Maintenance will commence on completion of resurvey.	314	Under resurvey owing to inaccuracy of resurvey records.
	Yernagudem ...						
	Tanuku ...						
Anantapur ...	Narasapur ...	Block map.	1867	1896	...	678	To be resurveyed owing to inaccuracies in resurvey records (G.O. No. 1491, Revenue, dated 28rd May 1914).
	Bhimavaram ...						
	Beswada ...						
Anantapur ...	Gudivada ...	Diagonal and off-set.	1867	1898—1906	1918—1914	4,010	To be maintained (field maps not yet printed).
	Kaikalur ...						
	Bandar ...						
Anantapur ...	Divi ...	Triangles.	1880—1886	...	1913	3,258	To be maintained.
	Guntūr ...						
	Sattenapalle ...						
Anantapur ...	Vinnkonda ...	Block map (some plane table).	1886—1894	...	Cannot be maintained.	3,207	Wet lands to be resurveyed and dry lands to be revised (G.O. No. 8236, Revenue, dated 7th November 1913 and G.O. No. 8264, Revenue, dated 16th November 1914).
	Pajnad ...						
	Narasaraopet ...						
Bellary ...	Ongole ...	Triangles.	1879—1889	...	1918	3,726	To be maintained (to be resettled without resurvey).
	Penukonda ...						
	Tadpatri ...						
Bellary ...	Gooty ...	Block map (some plane table).	1886—1894	...	Cannot be maintained.	3,207	Wet lands to be resurveyed and dry lands to be revised (G.O. No. 8236, Revenue, dated 7th November 1913 and G.O. No. 8264, Revenue, dated 16th November 1914).
	Kadiri ...						
	Kalyandrug ...						
Bellary ...	Dharmavaram ...	Triangles.	1879—1889	...	1918	3,726	To be maintained (to be resettled without resurvey).
	Hindupur ...						
	Madakasira ...						
Bellary ...	Anantapur ...	Block map (some plane table).	1886—1894	...	Cannot be maintained.	3,207	Wet lands to be resurveyed and dry lands to be revised (G.O. No. 8236, Revenue, dated 7th November 1913 and G.O. No. 8264, Revenue, dated 16th November 1914).
	Adoni ...						
	Alur ...						
Bellary ...	Siruguppa ...	Triangles.	1879—1889	...	1918	3,726	To be maintained (to be resettled without resurvey).
	Bellary ...						
	Hospet ...						
Bellary ...	Kudligi ...	Block map (some plane table).	1886—1894	...	Cannot be maintained.	3,207	Wet lands to be resurveyed and dry lands to be revised (G.O. No. 8236, Revenue, dated 7th November 1913 and G.O. No. 8264, Revenue, dated 16th November 1914).
	Adoni ...						
	Alur ...						

Name of districts.	Taluks.	System of existing survey.	Date of original survey.	Date of resurvey or revision survey.	Date of commencement of maintenance on modern lines.	Total surveyed area in square miles.	Remarks.
Bellary—cont. ...	Hadagalli ...	Plane table.	1889-1891	...	1914	1,781	{ To be maintained (to be resettled without resurvey).
	Harpanahalli ...						
Kurnool ...	Bayadrag ...	Triangles.	1875	1908	1910	2,059	{ To be maintained.
	Markapur ...						
	Remaining seven Taluks.	Diagonal and offset.	1866-1874	1900-1907		5,329	
Cuddapah ...	All taluks ...	Triangles ...	1878-1876	1906-1911	1913-1914	5,631	To be maintained.
Chittoor ...	Do. ...	Do. ...	1879-1882	1912-1915	Now commencing.	2,931	Do.
Nellore ...	Do. ...	Diagonal and offset.	1867-1878	1903-1905	1911-1913	3,948	Do.
Chingleput ...	Do. ...	Triangles ...	1869-1873	1906-1910	1914	2,124	Do.
South Arcot ...	Cuddalore ...	Do. ...	1888	...	Not yet commenced.	417	Under revision survey.
	Remaining seven taluka.	Do. ...	1890-1897	...	No maintenance going on.	3,461	To be revision surveyed (G.O. No. 3130, Revenue, dated 16th July 1912).
North Arcot ...	Tiruvannamalai ...	Triangles ...	1882	...	1915	989	To be maintained.
	Tirupattur ...	Diagonal and offset.	1868	1907	1910	867	Do.
	Remaining taluks...	Triangles ...	1875 to 1878	1912-1914	Now commencing.	2,789	Revision survey just completed. To be maintained.
Salem ...	Salem ...	Diagonal and offset.	1865-1867	1896	Maintenance not possible.	2,818	{ To be re-surveyed owing to inaccuracies in resurvey records (G.O. No. 8519, Revenue, dated 1st December 1913).
	Omair ...						
	Tiruchengode ...	Do.	1865-1868	1906-1907	1910	1,987	To be maintained.
	Attur ...						
	Utankarai ...	Plane table.	1888	...	Not yet commenced.	288	Under resurvey owing to loss of records.
	Hoar ...						
Tanjore ...	Krishnagiri ...	Do.	1888	...	...	289	To be resurveyed owing to loss of records.
	Dharmapuri ...						
	Mayavaram ...	Do.	1888	...	...	1,807	{ To be resurveyed (G.O. No. 2339, Revenue, dated 3rd August 1912).
	Mannargudi ...						
	Negapatam ...	Do.	1889-1890	...	{ 1913, but maintenance not satisfactory.	768	Proposed for revision survey.
	Nannilam ...						
	Tiruttraippundi ...	Triangles.	1888-1890	...	1913-1914	768	To be maintained.
	Pattukkottai ...						
	Arantangi ...	Do.	1875	...	1914	560	Under resurvey (G.O. No. 8519, Revenue dated 1st Dec. 1913). Resurveyed in 1914.
	Tanjore (Half) ...						
Trichinopoly ...	Shiyali ...	Diagonal and offset.	1863-1865	{ 1896	...	768	{ To be resurveyed owing to inaccurate resurvey (G.O. No. 3136, Revenue, dated 2nd Nov. 1914).
	Kumbakonam ...						
	Papanasam ...	Block map.	1863-1864	1894-1895	Maintenance not possible.	2,369	To be resurveyed owing to new irrigation.
	Tanjore (Half) ...						
	Karur ...	Do.	1875	...	1914	560	To be maintained.
	Namakkal ...						
	Trichinopoly ...	Diagonal and offset.	1863-1865	{ 1896	...	768	{ To be resurveyed owing to inaccurate resurvey (G.O. No. 3136, Revenue, dated 2nd Nov. 1914).
	Kulittalai ...						
	Musiri ...	Block map.	1863-1864	1894-1895	Maintenance not possible.	2,369	To be resurveyed owing to inaccurate resurvey (G.O. No. 3136, Revenue, dated 2nd Nov. 1914).
	Perambalur ...						
	Udaiyarpalayam ...	Block map and Plane Table.	1889-1896	...	Regular maintenance not possible.	4,084	To be resurveyed (G.O. No. 2129, Revenue, dated 16th July 1912).
	Palni ...						
Madura ...	Periyakulam ...	Triangles.	1880	...	No maintenance going on.	1,140	Under revision survey.
	Remaining five taluks.						
	1880-1885	Block map and Plane Table.	1889-1896	...	Regular maintenance not possible.	4,084	To be resurveyed (G.O. No. 2129, Revenue, dated 16th July 1912).
	1880-1885						
Tinnevely ...	All taluks ...	Diagonal and offset.	1870-1874	1907-1911	1912-1915	2,489	To be maintained.
Malabar ...	All taluks except Wynaad.	Block map and Plane Table.	1889-1896	...	Regular maintenance not possible.	4,084	To be resurveyed (G.O. No. 2129, Revenue, dated 16th July 1912).
	Wynaad ...	Angular ...	1899	...	1914	821	Proposed for revision survey.
Coimbatore ...	Coimbatore ...	Diagonal and offset.	1873-1877	1910	1913-1915	1,614	To be maintained.
	Palladem ...						
	Avanashi ...	Do.	1873-1877	1910	1913-1915	1,614	To be maintained.
	Pollachi (portion)...						

Name of districts.	Taluka.	System of existing survey.	Date of original survey.	Date of resurvey or revision survey.	Date of commencement of maintenance on modern lines.	Total surveyed area in square miles.	Remarks.
Coimbatore—cont.	Gobichettipalayam.	} Triangles.	1878-1880	...	1913-15	5454	To be maintained.
	Erode ...						
	Bhavani ...						
	Dharapuram ...						
	Pollachi ...						
	Udumalpet ...						
	Kollegal ...						
South Canara ...	Kasargod ...	} Block map and Plane Table.	} 1893-1896	...	1911-12	4,018	Probably needing resurvey.
	Karkal ...						
	Mangalore ...						
	Uppinangadi ...						
	Udipi ...						
	Coondapur ...						
Rāmnād ...	All taluks ...	Diagonal and Offset.	1872-1883	1911-1912	} Maintenance not yet commenced.	596	To be maintained.
The Nilgiris ...	Oonoor ...	} Angular ...	1883	*1909-1914		729	Do.
	Ootacamund ...						
	Gudalur ...	Do. ...	1883	...	1914	280	To be revision surveys
Anjengo	Block map.	1891	...	1910	1	To be maintained.
	Total area	88,461	...

* Revision survey carried out by a special staff.

ABSTRACT.

	Sq. miles.
I. Area to be maintained (including areas now actually under resurvey or revision survey)—	
(a) Diagonal and offset areas	23,408
(b) Triangles areas	32,671
(c) Block map areas	1,782
(d) Areas surveyed by angular instruments	729
Total ...	58,590
II. Area ordered to be resurveyed or revision surveyed (for Government Orders see body of statement)	25,853
III. Area probably needing resurvey (South Canara)	4,018
Grand total ...	88,461

APPENDIX II-E.

STATEMENT showing nature of Karnam's and Revenue Inspector's charges in each district of the Madras Presidency.

Name of the district.	Total area of assessed land in the district.	Total assessment of the district.	Total number of karnams in the district.	Average area of a karnam's charge (assessed land only).	Average assessment of a karnam's charge.	Average number of survey marks per karnam.	Average pay of a karnam per month.	Number of Firka Revenue Inspector's charges.	Average number of karnams for each Revenue Inspector's charge.
1	2	3	4	5	6	7	8	9	10
	ACRES.	RS.		ACRES.	RS.		RS.		
Ganjām	444,348	18,02,666	383	1,160	3,401	4,453	7-9	16	24
Vizagapatam	169,723	6,84,594	180	948	3,803	1,969	8-0	11	16
Godāvari	486,608	36,11,377	545	898	6,626	1,080	8-5	32	17
Kistna	1,169,228	62,15,689	766	1,515	8,125	1,174	8-0	42	19
Guntur	2,390,080	55,28,785	1,009	2,369	5,479	1,284	9-4	33	31
Nellore	1,475,092	25,22,992	587	2,602	4,450	1,926	8-9	28	20
Cuddapah	1,298,064	15,32,256	516	2,516	2,969	3,694	8-3	30	17
Anantapur	2,358,296	14,48,741	580	4,057	2,498	2,451	8-0	30	19
Bellary	2,264,935	18,78,800	589	3,981	3,302	1,877	8-4	29	20
Kurnool	2,660,426	19,42,695	702	3,790	2,767	2,368	8-1	31	23
Chingleput	760,517	20,75,982	695	1,094	2,987	2,549	8-2	22	32
Chittoor	608,221	7,99,117	380	1,648	2,422	5,317	8-3	19	17
North Arcot	1,321,999	26,49,975	978	1,250	2,709	2,020	8-1	35	28
South Arcot	1,608,374	41,71,642	1,323	1,216	3,153	2,209	8-2	33	35
Tanjore	1,198,027	60,02,595	1,402	851	4,281	1,706	9-3	38	37
Trichinopoly	1,763,903	28,10,088	766	2,303	3,669	1,999	8-9	31	26
Madura	1,237,438	25,88,197	546	2,266	4,649	3,261	8-6	34	16
Rāmnād	318,771	6,02,950	115	2,772	5,243	3,839	8-7	9	13
Tinnevely	1,262,852	26,33,443	493	2,607	5,342	2,464	9-2	23	18
Coimbatore	2,664,826	31,43,063	778	3,425	4,040	2,127	8-6	35	22
Nilgiris	216,956	1,38,945	28	7,748	4,784	4,658	13-5	6	5
Salem	1,455,218	19,72,445	775	1,877	2,545	1,334	7-5	31	25
South Canara	2,233,011	22,84,246	357	6,255	6,899	2,355	10-6	18	20
Malabar	2,660,610	34,98,487	793	3,343	4,895	2,537	9-8	33	22
Total	33,907,513	619,84,780	15,198	2,231	4,078	2,211	8-7	664	23

APPENDIX II-F.

RECORD of Rights—Proposed A Register.

Survey number.	Subdivision number.	Old survey number and sub-division number.	Government or inam.	Dry, wet or poramboke.	Source of irrigation.	Single or double crop.	Rate per acre.	Extent.	Assessment.	Name and description of proprietor; vide note (1) below.	Name and description of occupant, with status; vide notes (1) and (2) below.	Substance of order of change with authority (reference to mutation register or entry in village account 8).	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Notes.—(1) *Columns 11 and 12*—Name, father's name, caste and residence should always be given. In the case of Hindu joint families only the name and description of the managing member should be given. In other cases where there are more than one person concerned the name and description of each person and the amount of his share should be given.

(2) *Column 12*.—The term "occupant" includes not only a proprietor in actual occupation of his land but also certain other persons in lawful possession, e.g., kanomdar, mulgenidar, mortgagee in possession, member of a joint family or coparcenary in separate possession. In each case the status should be given, e.g., "Ramaswami, usufructuary mortgagee."

Serial number

REGISTER of Changes (Mutation Register).

Foil.

Old entry.						New entry.					
Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.	Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.
1	2	3	4	5	6	7	8	9	10	11	12

Summary of order.

Serial number.

REGISTER of changes (Mutation Register).

Counterfoil.

Old entry.						New entry.					
Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.	Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.
1	2	3	4	5	6	7	8	9	10	11	12

Karnam's report of the facts with signature of the parties if present and attestation of Headman.

Abstract of Revenue Inspector's enquiry with attestation of village officers and signed statement of parties, if present.

Similar record of Collector's, Divisional Officer's, Tahsildar's and Deputy Tahsildar's enquiry, if any.

Order of Revenue Inspector (undisputed cases) or order of the Collector, Divisional Officer, Tahsildar or Deputy Tahsildar (disputed cases).

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