

FAMINE COMMISSION, 1878.

COMPILATION

OF

REPLIES TO QUESTIONS CIRCULATED
BY THE FAMINE COMMISSION

FOR THE

MADRAS PRESIDENCY.

VOLUME I.

CHAPTER I (PORTIONS NOT DISPOSED OF BY THE
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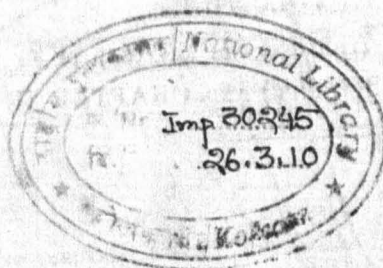
MADRAS:

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COMPLATION



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FAMINE COMMISSION.

EXTRACT FROM THE PROCEEDINGS OF THE MADRAS GOVERNMENT,
FINANCIAL DEPARTMENT, DATED 5TH AUGUST 1878, No. 1374.

ORDER THEREON, 5th August 1878, No. 1374.

With the above letters the Secretary to the Famine Commission forwards two Lists of questions drawn up by the Commission, and which, it is suggested, should be circulated by this Government to the most experienced officers in this Presidency; the replies being forwarded direct to Mr. G. A. Ballard, the local Member of the Commission, who has been specially charged with the preliminary consideration, and the duty of superintending the compilation, of the replies so received, prior to their being submitted to this Government, in view to an opportunity being afforded to His Grace the Governor in Council of recording his opinion thereon, should he think fit to do so.

2. His Grace the Governor in Council is accordingly pleased to direct that the first list, which contains the questions relating to the following subjects, viz.:—

The condition of the country and people ;
Relief during the earliest stages of distress ;

Famine Relief :

Section 1—Relief works ;
„ 2—Gratuitous relief ;
„ 3—Miscellaneous ;

Famine Prevention ;

be communicated to the Board of Revenue, to all Collectors, and to the officers marginally named. The Government desire that the Members of the Board of Revenue will either jointly or severally reply to any of the questions on which they desire to submit remarks or opinions. To all questions of a statistical nature in Chapter I, the Board are requested to furnish complete replies to Mr. Ballard ; referring of course to Collectors where accurate information on any point is not available in their own office. The Board will take early steps to inform Collectors what particular questions they may thus decide to deal with finally themselves ; and Collectors will understand that, beyond furnishing to the Board, with all the expedition possible, such information as may be called for in respect to those queries, they are under no obligation to send further replies on the same subjects to Mr. Ballard. All other questions in that Chapter are however open for answer by Collectors (as well as by the Board) in consultation with their most experienced subordinates, European and Native, and any non-official persons whom they may select ; the replies being sent direct to Mr. Ballard. Besides the replies of the Board and Collectors, it is desirable that Mr. Ballard should be furnished with replies to some of the questions from the officers specified below, viz.:—

Nos. 6, 7, and 23 by the Superintendent of the Government Farms ;
„ 6, 9, 10, 11, 12, and 13 by the Director of Revenue Settlement ;
„ 2, 24, and 25 by the Sanitary Commissioner ;
No. 19 by the Consulting Engineer for Railways ;
„ 20 by the Chief Engineer for Irrigation ; and
„ 23 by the Conservator of Forests.

3. CHAPTERS II AND III.—The questions contained in these Chapters will be referred specially to all Collectors, District Engineers, and Zillah Surgeons, for reply. These officers will further communicate them to such of their respective subordinates as have had practical experience, in a responsible capacity, of any portion of the late relief operations; with instructions that each officer consulted shall answer those queries only, regarding which he has gained direct personal knowledge. These Chapters (II and III) will also be referred to the Inspectors-General of Police and Jails, to the

Major Baynes.
" Liardet.
" Shaw.
" Ross.
Mr. Howe.
" Oldham.

Mr. Weekes.
" Kisch.
" J. H. Cook.
" C Travers.
Capt. R. Wilson.
Lieut. Casey.

Deputy Inspectors-General of Police, to all District and Assistant Superintendents of Police, and to the officers marginally noted, for answering, so far as the experience, observation or knowledge of each qualifies him to do so. Each Collector, District Engineer, and Zillah Surgeon will

collect the replies of his own subordinates and forward them to Mr. Ballard, as received, with any annotations of his own which he may wish to make.

4. CHAPTER IV will be referred to the Chief Engineer, Department of Public Works, and to the Chief Engineer for Irrigation, who will reply to the questions in the form of a note or memorandum. Questions 6, 11, 12, 13 to 15, 17, 19, and 21 to 28 of this Chapter will also be referred for the replies of the officers named in the margin.

Mr. Sullivan, C.S.
" Longley, C.S.
" H. S. Thomas, C.S.
" Horsley, C.S.
" Leman, C.S.
" Foster, C.S.
" Grose, C.S.

Mr. Wilson, C.S.
" H.J. Stokes, C.S.
" Price, C.S.
" Crole, C.S.
" Wilkinson, C.S.
" McWatters, C.S.
" E. Turner, C.S.

5. With regard to the second list of queries, which relates to Relief-camps and Working-camps, His Grace the Governor in Council resolves to select the following as the specimen camps to be reported on. The names of the Medical Officers in charge are given so far as immediately known:—

RELIEF-CAMPS.

1. Red Hills	Dr. Sturmer.
2. Monegar Choultry	Dr. Thompson (now on leave).
3. Kaderbagh, Kurnool	Dr. Fitzpatrick (now at Trichinopoly).
4. Nellore Town	Dr. Ross.
5. Ranipett	Dr. Lancaster (now at Salem).
6. Madhanapalle	Mr. Apothecary Ward.
7. Penukonda	Dr. Williams.
8. Trichinopoly	Dr. King (now at Kurnool).
9. Dindigul	Rev. Dr. Chester.
10 and 11, Coimbatore Town, Nos. 2 and 4.	Dr. Morton having left, the Civil Surgeon should report.
12. Chalk Hills, Salem	Civil Surgeon, Salem.
13. Dharmapuri	Hospital Assistant in charge.
14. Udamalpetai	Civil Surgeon, Coimbatore.
15. Adoni	Dr. Williams, late Sanitary Inspector.
16. Cuddapah	Dr. Iyasawmy.
17. Cuddalore	Dr. Robertson.
18. Vellore	Drs. Fox and Price (now at Ootacamund).
19. Madura	Dr. Williams.
20. Conjeveram	Native Assistant Surgeon.
21. Osoor	Dr. Wells.
22. Tripasore	Apothecary in charge.

WORKING-CAMPS.

Buckingham Canal Camps	Dr. O'Hara.
Chepauk	
Peapally	

The questions in this list will be referred for reply, through the Surgeon-General, to the Medical Officer concerned; whose report will be furnished to the Collector, Divisional Officer or Public Works Executive Officer who was in general charge of the camp. The latter officer will add his own remarks, and send the whole, direct, to Mr. Ballard.

6. Besides the officers of Government above specified, His Grace in Council resolves to circulate both sets of questions to the marginally-noted gentlemen and Societies, inviting them to furnish replies to such questions as they feel themselves competent to answer. The Bishops and Missionary bodies named will be requested to circulate copies of the questions to their most experienced Clergymen and associates; for which purpose twenty additional copies will be furnished to each.

7. The attention of all official and non-official gentlemen, answering any of the questions, is particularly drawn to the preliminary observations annexed to the two Lists; and they are requested to use every endeavour to submit their answers to the local Member of the Commission, Mr. G. A. Ballard, before the 15th September next, or as soon after as possible.

(True Extract.)

D. F. CARMICHAEL,
Chief Secretary.

To G. A. Ballard, Esq.
 „ H. E. Sullivan, Esq., Member, Board of Revenue.
 „ H. S. Thomas, Esq., Member, Board of Revenue.
 „ the Board of Revenue.
 „ all Collectors and the Commissioner of the Nilgiri.
 „ the Public Works Department.
 „ the Chief Engineer, Department of Public Works.
 „ the Revenue Department.
 „ the Revenue (Famine) Department.
 „ the Chief Engineer for Irrigation.
 „ the Consulting Engineer for Railways.
 „ the Conservator of Forests.
 „ the Director of Revenue Settlement.
 „ the Sanitary Commissioner.
 „ the Surgeon-General, Indian Medical Department.
 „ all Zillah and Civil Surgeons.
 „ District Engineers.
 „ the Inspector-General of Jails.
 „ „ of Police.
 „ Major C. D. Baynes, Government Agent, Chepauk.
 „ Major C. A. Liardet, on Famine duty, North Arcot.
 „ Major E. W. Shaw, on Famine duty, North Arcot.
 „ Major G. C. Ross, on Famine duty, Coimbatore.
 „ Captain R. Wilson, on Famine duty, Madras.
 „ Lieutenant C. L. Casey, on Famine duty, North Arcot.

To W. A. Howe, Esq., B.C.S., Bellary.
 „ W. B. Oldham, Esq., B.C.S., Bellary.
 „ H. M. Kisch, Esq., B.C.S., Bellary (care of Collector).
 „ A. Weekes, Esq., B.C.S. Cuddapah (care of Collector).
 „ J. H. Cook, Esq., Revenue Survey, Coimbatore.
 „ C. Travers, Esq.
 „ F. H. Wilkinson, Esq., Acting District and Session Judge, Bellary.
 „ G. McWatters, Esq., Sub Collector, Coimbatore.
 „ E. Turner, Esq., Special Assistant, Madura.
 „ the Superintendent of the Government Farms.
 „ the Hon. Goday Naraen Gajapathi Rau.
 „ „ Humayun Jah Bahadur.
 „ „ V. Ramiengar, C.S.I.
 „ „ A. Seshaya Sastri, C.S.I.
 „ J. Macartney, Esq., Sundur, Bellary.
 „ the Right Rev. the Bishop of Madras.
 „ the Right Rev. Dr. S. Fennelly, Madras.
 „ the Very Rev. B. F. Amarante, St. Thomé.
 „ the Right Rev. the Vicar Apostolic of Vizagapatam.
 „ „ of Madura.
 „ „ of Mangalore.
 „ „ of Coimbatore.
 „ the Right Rev. Bishop Caldwell, Palamecottah.
 „ „ Sargeant, do.
 „ the Rev. Dr. Chester, Madura.
 „ the Secretary, Society for the Propagation of the Gospel.
 „ „ Church Missionary Society.
 „ „ Vepery Mission.

To the Secretary, Church of Scotland Mission.	To the Secretary, Danish Lutheran Mission
" " Free Church of Scotland Mission.	(South Arcot).
" " Wesleyan Mission Society.	" " American Lutheran Mission
" " London Mission Society.	(Guntoor).
" " American Madura Mission.	" " Evangelical Lutheran Mission
" " American Arcot Mission.	(Nellore).
" " " Baptist Telugu	" " Basel Evangelical Mission
" " Mission (Nellore).	(Mangalore).
" " Leipzig Lutheran Mission	" " Basel Evangelical Mission
(Tranquebar).	(Cannanore).

GUIDE TO THE COMPILATION OF REPLIES TO FAMINE COMMISSION QUESTIONS.

Number.	Districts.	Name of Officers.	Office held and Famine Experience.	ANSWERS TO QUESTIONS EXTRACTED.				
				Chapter I.	Chapter II.	Chapter III.		
						Section (1).	Section (2).	Section (3).
1	2	3	4	5	6	7	8	9
1	Ganjam ..	H. St. A. Goodrich, Esq. ..	Acting Collector.—For three months, May to July 1866, supervised gratuitous relief kitchen at Russelkonda in Ganjam during the famine of 1866.; watched relief in Vizagapatam given to their tenants by Zemindars during the pressure caused by the high prices during 1877 and 1878, and opened camps on a very small scale for a short time.	..	1, 3 & 4.	..	..	36, 37 & 40.
2	Vizagapatam.	J. Lee Warner, Esq. ..	Acting Principal Assistant Collector. Was employed during the scarcity of 1866 in collecting notes of the actual condition of the people in various divisions of North Arcot and Salem Districts for Sir William Robinson. In 1871 became Manager of the Ramnad Estate; was on furlough part of 1875-76, but returned in time to take charge of all the relief operations in that quarter during the famine of 1877; transferred to Vizagapatam in March 1878.	..	1, 2, 6, 8, 10, 12 & 13.	2 & 3, 4, 12, 13 & 14.	23, 24 & 32.	35, 36, 38 & 43.

[A]

Guide to the Compilation of Replies to Famine Commission Questions—continued.

Number.	Districts.	Name of Officers.	Office held and Famine Experience.	ANSWERS TO QUESTIONS EXTRACTED.				
				Chapter I.	Chapter II.	Chapter III.		
						Section (1).	Section (2).	Section (3).
1	2	3	4	5	6	7	8	9
	Vizagapatam— <i>contd.</i>	The Hon. G. N. Gajapathi Row.	Zemindar in Vizagapatam District and Member of the Madras Legislative Council. His experience of the famine is confined to the Vizagapatam District where he had oppor- tunity to observe the effects of distress and to take measures for the relief of the distressed both in his taluks and the town of Vizagapatam.	..	1, 2, 6, 7 & 9.	18	..	35, 37, 43 44 & 45.
3	Godavari ..	W. S. Foster, Esq. ..	Collector.	9, 23.	..	..	..	..
4	Kistna ..	J. G. Horsfall, Esq. ..	Acting Collector	23, 24, 25 & 26.	1-9 & 11- 13.	4, 5 & 7-11, 13, 15- 22.	24, 27, 29- 32.	35-42 & 44 & 45.
	Do. ..	Lieut.-Col. J. O. Hasted ..	Superintending Engineer .. .. .	..	1, 2, 6, 7, 12.	5, 6, 11- 16, 18- 21.	..	38, 41
5	Nellore ..	J. Grose, Esq.	Collector.—Posted to the District in February 1877, when he found that famine was fully established and that relief works and relief camps had been opened all over the districts. Saw the famine in its height and decline.	24 & 26	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 & 13.	2-16 & 18- 22.	23 to 28, 30-33.	35-43.
	Do. ..	Lt. C. B. Henderson, R. E.	Assistant Engineer, Public Works Depart- ment.	.	6	5, 11, 14, 16, and 18-20.	..	35, 39.

	Do.	..	A. J. B. Atkinson, Esq..	Sub-Collector in charge of Collector's Office.	25 & 26.	..	..	..	..
6	Cuddapah	..	Surgeon McNally	Civil Surgeon, South Canara. Was employed as Sanitary Inspecting Officer in connection with famine relief measures in Cuddapah from 26th April to 20th September 1877.	24.	7	2 & 3, 5, 7, 12, 14.	23, 24, 26.	38, 40.
	Do.	..	Dr. Ayasawmy. . .	Civil Surgeon, Cuddapah	..	..	..	25.	..
7	Bellary	..	H. P. Gordon, Esq.	Acting Collector.	9, 23.	..	..	..	..
	Do.	..	H. T. Ross, Esq.	Acting Head Assistant Collector	..	..	2 & 3, 7, 11, 19, 20.	..	39, 42.
	Do.	..	M. R. Ry. Vencatachellum Puntulu.	Deputy Collector of Harpanahalli Division.	..	1, 2, 5, 7 & 10.	..	..	..
	Do.	..	W. B. Oldham, Esq., B.C.S.	On special duty. Has experience of the Madras famine of 1876, 1877, and 1878, having been in famine charge of the Adoni Division since the 7th March 1877, and of the Bellary Division since the 1st April 1878. Travelled through the Bellary District between December 1877 and April 1878 as compiler of the famine accounts, and had opportunities for observing both the account and famine administration; is now also in charge of the Dharmavaram, Anantapur and Raidroog Famine Divisions. Had also experience in the Orissa famine of 1866 and the Bengal famine of 1874.	..	1, 3-10 & 13.	2-8, 10-15 & 17-22.	25-27 & 30-32.	35, 36, 38 39, 41-45.
	Do.	..	W. B. Leggatt, Esq.	Executive Engineer, Bellary Division	..	..	4-6, 10, 11, 14, 17-21.	..	..
	Do.	..	J. Macartney, Esq.	Agent to the Rajah of Sundur and Manager of the Estate.	..	1, 2, 6-8, 10.	2 & 3, 6.	..	..
	Do.	..	J. W. Rundall, Esq., M.I.C.E.	District Engineer	..	..	2-12 & 14-22.	..	..
8	Kurnool	..	O. S. Crole, Esq.	Acting Collector since the beginning of 1878. Was Additional Sub Collector of Nellore in charge of famine operations over a large portion of that District from February 1877 till March 1878.	9.	1-7.	2-7, 12-14, & 20, 22.	23-27, 29-32 & 33.	35-41, 43-45.
	Do.	..	G. W. Fawcett, Esq.	Acting Head Assistant Collector	..	..	2-7, 10 & 19.	30, 31, 33.	39, 44 & 45.

Guide to the Compilation of Replies to Famine Commission Questions—continued. .

Number.	Districts.	Name of Officers.	Office held and Famine Experience.	ANSWERS TO QUESTIONS EXTRACTED.				
				Chapter I.	Chapter II.	Chapter III.		
						Section (1).	Section (2).	Section (3).
1	2	3	4	5	6	7	8	9
	Kurnool— <i>contd.</i>	C. J. Knox, Esq. ..	Special Assistant Collector from June 1877. Was stationed at Head Quarters to assist the Collector and to relieve him of the ordinary Revenue and Magisterial work of the District, but was latterly employed more directly on famine duties, and had to do with the distribution of village relief and of the Mansion House Fund.	..	2-9.	2-5, 7-9 12-15.	24, 25, 29- 32.	36, 38.
	Do. ..	K. F. Nordmann, Esq. ..	District Engineer from July 1878. Had been in charge from October 1877 to July 1878 of the relief works in the Irrigation Division of the Coimbatore District.	..	6.	2-16 & 20	..	..
	Do. ..	J. F. Maxwell, Esq. ..	Executive Engineer, Special Famine Relief Works.	..	6.	2 & 3, 5, 10.	..	..
	Do. ..	M. Mooneappa Pillay ..	Sub Engineer, Public Works Department, Nandial. As Range Officer conducted relief works for fifteen months in Udiarpolliem taluk of the Trichinopoly District and in Nandial of Kurnool.	..	6.	5, 6, 14, 17.	..	..
	Do. ..	Surgeon H. A. C. Gray, M.B., Edinburgh, Royal Medical Service.	In medical charge of relief camp, Peapalli. Has had experience of the Madras famine since April 1877, from which date to 30th Sept. 1877 he was employed in Chingleput, and since 1st December in Kurnool.	..	..	5, 6, 12.	23, 26-29 & 31.	..

9	Chingleput ..	J. F. Price, Esq. ..	Collector. Has famine experience in three Districts. In Bellary had charge of a large number of famine coolies from October 1876 to January 1877. Was then appointed Acting Collector, Cuddapah, where he had the management of famine in all its severe stages. Was transferred in March 1878 to Chingleput District, where he found the famine in its decline.	9, 23, 24, 25 & 26.	1-7, 9, 12 & 13.	2-10, 12 & 15-22.	23-32.	35-42 & 44 & 45.
	Do. ..	A. M. Jones, Esq. ..	Has been Deputy Collector and Magistrate in the District since 1873 with but a little break. Had charge of the famine operations in the Saidapet Taluk.	..	2-4, 6, 7, 9 & 10.	2 & 3, 5, 6, 8, 10, 11, 15, 16, 19, 20 & 22.	..	..
	Do. ..	C. H. Travers, Esq. ..	Divisional Relief Officer Ponneri and Trivellore taluks.--Writes however chiefly of the Cuddapah District, where he was on special famine duty. First employed in transporting rice from the Cuddapah Depot to the sub-depôts in the Cuddapah and Kurnool Districts and afterwards in relief charge of one or other division of Cuddapah.	..	1-3, 6 & 8.	2 & 3, 4, 6, 10-12, 14, 15, 17 & 19.	23-26.	..
	Do. ..	G. E. Baudry, Esq. ..	Famine Relief Officer in Saidapet Taluk ..	..	6, 7.	5, 15, 18, 20, 21.	24, 26, 30, 31 & 32.	42.
	Do. ..	H. Shaw, Esq. ..	Officiating Deputy Collector, North-West Provinces. Employed on special famine duty for twelve months in the Dindigul Subdivision of Madura and Conjeveram Division of Chingleput. Had also experience in the famine of 1874 in the North-West Provinces.	..	..	..	..	..
	Do. ..	Surgeon A. J. Sturmer ..	Zillah Surgeon, Chingleput. Writes of the Nellore District, where he was Sanitary Inspecting Officer from April to December 1877 and was in charge of the Nellore Relief Camp from 1st January to 10th February 1878.	..	..	14.	23, 26 & 27.	..
10	North Arcot ..	W. S. Whiteside, Esq. ..	Collector .. .. .	..	1-13.	..	..	..
	Do. ..	W. Austin, Esq. ..	Sub Collector .. .. .	..	1-10 & 12.	2-5, 7, 15, 17 & 19.	23-26, 29-31.	36, 38-40 & 43.
	Do. ..	Lieut.-Col. H. L. Prendergast, R.E.	District Engineer	2-21.	..	41, 42.
	Do. ..	M.R.Ry. Ruthnasabapathy Pillay.	Assistant Engineer	4-7, 10, 11, 16 & 18.

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Guide to the Compilation of Replies to Famine Commission Questions—*continued.*

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						Section (1).	Section (2).	Section (3).
1	2	3	4	5	6	7	8	9
	North Arcot— <i>contd.</i>	W. G. Cotton, Esq. . .	Executive Engineer, Public Works Department, Bengal Irrigation Branch. In charge of Palar Channel Works.	..	6.	4-6, 11, 19, 21.	30	..
	Do. . .	Mr. Abdul Kharim Khan	Overseer, and Sub-Divisional Officer, Public Works Department, Gudiyatam.	..	6	5, 6, 14, 19.	..	..
	Do. . .	Lieut. Hamilton, R.E. . .	Assistant Engineer in charge of Wallajapet Range and famine works therein from September 1876.	..	6, 8.	..	..	..
	Do. . .	S. Kitts, Esq.	Special Assistant Collector—Was for some time in charge of relief works in the Shiva-ganga Zemindari, Madura District.	..	..	6	..	..
	Do. . .	Major E. W. Shaw . . .	Special Famine Relief Officer with experience chiefly confined to gratuitous relief—Was also in famine charge of Chittur Taluk.	..	6-8.	19	24, 25, 38.	..
	Do. . .	H. Gillon, Esq.	Special Relief Officer. Employed in the Cuddapah District from March to April 1878 and in North Arcot from May 1878 up to date. In the latter he had to deal with gratuitous relief only; in Cuddapah he had supervision of relief works and gratuitous relief in two taluks during the height of the famine. Had experience of the Bengal famine of 1874.	..	..	2 & 3, 5, 18, 22.	23	38, 40.

[2]

	Do.	...	Sergeant C. Stewart	..	Supervisor, Public Works Department. Was in charge of Sub-division, Wallajapet Range, North Arcot, from November 1876 up to date; had experience of famine relief works from November 1877.	..	..	4-6, 10, 11.	..	..
11	South Arcot	..	Major Mead	..	District Engineer	..	6, 7.	2 & 3, 5-7, 10, 11, 17, 20, 21.	..	..
12	Tanjore	..	M. R. Ry. Hurry Row	..	A leading land-holder of the District	..	2, 4, 6, 8, & 12.	4, 6, 7, 18, 20.	23-25, 30, 32 & 33.	36, 37, 39, 40 & 43.
	..	..	Rev. Grahl	..	Of the Leipzig Luthern Mission, Tranquebar.	..	..	..	..	..
13	Trichinopoly	..	H. Sewell, Esq.	..	Has been Acting Collector for more than three years.	26.	2, 3, 6, 8-11.	..	..	..
	Do.	..	Lewis Moore, Esq.	..	Acting Head Assistant Collector. Has been in the District as Assistant and Head Assistant for nine years. The part of District that most suffered from famine was in his Division.	..	..	..	..	35-40, 43-45.
	Do.	..	M. R. Ry. Pattabhirama Pillay.	..	Collector's Sheristadar. Has been in the District as Tahsildar and Sheristadar for thirteen years. Was one of the principal agents in distributing gratuitous relief during the famine, and was for about two months in charge of the town relief camp.	..	..	..	25, 26, 32.	..
	..	..	Capt. R. F. Morris, R.E.	..	District Engineer, Trichinopoly Division	..	6	4-7, 10, 11, 16-19.	..	..
14	Madura	..	H. J. Stokes, Esq.	..	Acting Collector	23, 26.	4, 11.	22	..	35, 37, 39-42.
	Do.	..	C. W. W. Martin, Esq.	..	Acting Sub-Collector	..	1-7, 10, 12 & 13.	1-5.	31.	36-40, 42.
	Do.	..	M. R. Ry. P. Soobien	..	Deputy Collector	..	1-7, 9, 10.	2 & 3, 5-7, 18, 19, 22.	24, 25, 29-33.	35, 37, 38, 43-45.
	Do.	..	T. M. Horsfall, Esq.	..	Assistant Collector	..	1, 3, 7, 8.	6.	26, 27, 29.	..
	Do.	..	L. W. Paynter, Esq.	..	Executive Engineer in charge of the Dindigul Range. Has been employed in the district during the whole famine. His direct connection with relief works commenced from 1st November 1877.	..	6.	5, 10, 11, 16, 18.	..	..
	Do.	..	Rev. E. Chester, M.D.	..	Medical Officer, Dindigul Dispensary	24 & 26.	..	14	23, 26-29.	38, 43.

Guide to the Compilation of Replies to the Famine Commission Questions—continued.

Number.	District.	Name of Officer.	Office held and Famine Experience.	ANSWERS TO QUESTIONS EXTRACTED.				
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						Section (1).	Section (2).	Section (3).
1	2	3	4	5	6	7	8	9
15	Tinnevely ..	J. B. Pennington, Esq. ..	Appointed Collector in May 1877—Was Sub-Collector of the District from October 1866 to April 1870.	23, 24, 25 & 26.	1, 2, 5, 6, 7, 8, 11.	2 & 3.	..	40, 41 & 42.
	Do. ..	The Right Rev. Bishop Caldwell.	Stationed at Palamcottah. Has lived in the south of Tinnevely for nearly 37 years—Acquainted with the famine relief operations, especially private relief, of 1877, in Tinnevely and Ramnad.	..	..	..	30, 31.	43.
16	Salem ..	C. T. Longley, Esq. ..	Collector since October 1870	25 & 26.	1-6, 9, 10.	2-15 & 18-22.	23-33.	35-45.
	Do. ..	Surgeon J. Lancaster ..	Acting Zillah Surgeon	24.	..	..	23, 26 & 28.	..
	Do. ..	A. Weekes, Esq., ..	Was Divisional Officer in charge of Jammulamadugu Division, Cuddapah, from February 1878 to the end of May 1878, with the exception of an absence of 3 months. Had previous experience in the Famine of 1866 and the Bengal famine of 1874.	..	1-3, 5-10, 12 & 13.	2 & 3, 5-19, 21, 22.	23-27 & 29-32.	35-39, 41, 43-45.
	Do. ..	Rev. F. O. Newport ..	Of the London Mission. Vice-President and Treasurer and afterwards Secretary of the Salem Famine Relief Committee in connection with Mansion House Fund.	..	2, 3, 6-9.	7.	25, 30, 33.	38 & 43.
	Do. ..	Major C. D. Baynes ..	Madras Staff Corps. Government Agent, Chepauk. Was employed as Special Famine Relief Officer in the Dharmapuri Taluk from the 1st January 1877 to the end of March 1878.	.. .	2, 3, 6, 7 & 10.	4-19.	23-27, 29, 30, 32, 33.	..

17	Coimbatore	..	A. Mc.CWebster, Esq.	..	Commissioner of the Nilgiri from December 1876 to March 1878 and Collector of Coimbatore from March 1878.	23	1-3, 5-11 & 13.	2-7, 12, 15, 18-22.	23-25 & 30-33.	35-45.
	Do.	..	G. Mc. Watters, Esq.	..	Sub Collector.	..	..	4, 5.	..	..
	Do.	..	A. Pinto, Esq.	..	Deputy Collector. Was General Duty Deputy Collector in charge of Bhavani and Satyamangalam Taluks for some time during the course of the famine.	..	..	5, 6, 20.	..	42, 43, & 44 & 45.
	Do.	..	M. R. Ry. Vencatramaniah.	..	Tahsildar of Erode Taluk	..	..	..	..	38, 44 & 45.
	Do.	..	M. R. Ry. Seetharamiah.	..	Tahsildar of Palladam	..	1-10, 12 & 13.	..	..	..
	Do.	..	J. H. Cook, Esq.	..	Special Assistant in charge of relief operations, Udamalpetai, one of the most distressed taluks of the district all through the famine.	..	1-4, 6-10 & 12.	2-6, 8, 10, 11, 15, 16, 19-21.	24, 26, 27 & 31.	38, 39, 43-45.
	Do.	..	Lt.-Col. W. F. Bartleman	..	Bengal Infantry. Has been Famine Relief Officer, Dharapuram Taluk, for nearly a year and of the Erode Taluk for about 3 months.	..	7, 8 & 10.	2 & 3, 5, 18, 19.	25 & 26.	38-40, 44 & 45.
	Do.	..	Major G. C. Ross	..	16th Bengal Cavalry. Has had 12 months' experience of famine relief duty in the Coimbatore and Bhavani Taluks from September 1877 to September 1878.	..	7, 8, 10.	6, 7, 10, 11, 13, 14, 19.	23-25, 27 & 32.	42.
	Do.	..	A. W. Scanlan, Esq.	..	Relief Officer. Has been on famine duty in the district for nearly one year. Has had 18 months' experience of the Bengal famine of 1873-74.	..	6, 7.	2 & 3, 5.	..	38, 44 & 45.
	Do.	..	D. K. Homan, Esq.	..	Special Relief Officer in Bhavani and Satyamangalam Taluks from October 1877 to September 1878.	..	..	2 & 3.	25.	..
	Do.	..	T. H. Homan, Esq.	..	Relief Officer. Had charge at first of gratuitous relief operations of Satyamangalam Taluk, then of Erode and half of Palladam whence he was sent to Kangundi Division, North Arcot District, and then back to Erode Taluk.	..	..	..	24-26.	38.
	Do.	..	Captain A. Awdry	..	District Engineer. Has been continuously on duty in the district throughout the whole famine of 1876, 1877 and 1878.	..	4, 8, 12.	1-14, 16 & 18-22.	25.	39, 41 & 42.
	Do.	..	A. Russell, Esq.	..	Assistant Engineer in charge of the Coimbatore Division. Was engaged on the Buckingham Canal Famine Relief Works in the Nellore District.	..	..	2 & 3, 5, 7, 10, & 11.	..	..
18	Malabar	..	W. Logan, Esq.	..	Collector.	23	..	..	..	..

Guide to the Compilation of Replies to Famine Commission Questions—continued.

Number.	Districts.	Name of Officers.	Office held and Famine Experience.	ANSWERS TO QUESTIONS EXTRACTED.				
				Chapter I.	Chapter II.	Chapter III.		
						Section (1).	Section (2).	Section (3).
1	2	3	4	5	6	7	8	9
	Malabar—contd.	Lieut.-Col. R. B. Kennedy	District Engineer. Has had no experience of famine.	..	6.	12, 20.	..	..
	Do. ..	J. W. Minchin, Esq. ..	President of the Coffee Planters' Association, Wynad.	..	..	..	..	..
19	South Canara.	Rev. A. Mænnert and others.	....	23	..	..	..	..
20	Madras ..	Sir W. R. Robinson, K.C.S.I.	Late Senior Member of Council, Madras ..	23, 24 & 26.	1, 4, 6, 9, 12.	1-4, 6, 10, 14, 19.	23, 25, 26, 30-32.	35-41 & 43.
	Do. ..	Major Ross Thompson, R.E.	District Engineer, Presidency .. ..	..	..	2-4, 6, 8, 10-12, 15, 20, 21.	..	..
	Do. ..	Major S. C. Clarke, R.E. ..	Executive Engineer, Buckingham Canal Works.	..	6	2-4, 6, 7, 11, 14, 18-20.	..	..
	Do. ..	Captain G. Maitland ..	Executive Engineer .. ..	..	..	4, 6.	..	..
	Do. ..	W. Wilson, Esq. ..	Director of Revenue Settlement, Madras ..	9	..	..	..	..
	Do. ..	Lieut.-Col. Beedome ..	Conservator of Forests, Madras Presidency.	23	..	..	..	..
	Do. ..	Surg-Major W. R. Cornish.	Sanitary Commissioner, Madras	24 & 25.	..	..	..	..
	Do. ..	R. J. Melville, Esq. ..	Collector of Madras	26.	..	..	..	..
	Do. ..	P. G. Fitzgerald, M.D. ..	Deputy Surgeon-General, Mysore Division and Ceded districts.	..	..	5.	..	..

**EXTRACTS OF REPLIES TO QUESTIONS 9, 23, 24, 25 AND 26 IN
CHAPTER I. NOT DISPOSED OF BY THE BOARD OF REVENUE.**

QUESTION 9.—What is the ordinary economic condition of the portion of the agricultural population directly engaged in the cultivation of the land and possessing any proprietary or occupancy interest in land? Illustrate your reply by giving the actual facts as to a few typical instances of such persons taken from four or five different villages in several districts of your Province. State with regard to each, what area of land he holds for tillage or grazing, what his family consists of, what amount of food-grain and what value of other produce he raises on an average off his land in a year, what rent or revenue or cesses he pays for his land, what expenses he incurs in hired labor other than his own labor and that of his family, what amount he spends in a year in purchases of necessaries which he cannot produce on his land, what kind of house he lives in, how many rooms it possesses, and how many out-houses, what quantity of cattle or other live-stock he possesses, what other property, and what stock of grain. How does he dispose of any surplus income, whether by hoarding or lending his money, or investing it in ornaments, or spending it on marriage ceremonies, or otherwise? What are his debts, and to what are they commonly due? State what proportion of the agriculturists of your district you believe to be in debt, and what proportion their average indebtedness bears to their average yearly income. Endeavour to obtain the opinions on these points of well-informed and trustworthy native residents of different districts, and in submitting such opinions explain the position of your informants, and the probable means at their command of forming correct conclusions.

Mr. Crole.

The ryots are ordinarily poor, and mostly involved in debt contracted generally for purchase of cattle, for performance of marriages and other ceremonies, and partly for occasional or partial failure of the crops. In illustration of this a few statements indicating the actual facts in regard to certain persons in the villages round Kurnool are herewith sent.

To give a general view of the ordinary condition of the ryots, the rent-roll of the district with the average in grain for each class of ryots is subjoined:—

QUINQUENNIAL Statement showing the Rent-roll in the District of Kurnool for Fasli 1281.

Items.	SINGLE PUTTAS.		JOINT PUTTAS.		Average rate payable to Govern. ment.	Grain.
	No.	Assess-ment.	No.	Assess-ment.		
1	2	3	4	5	6	7
Ryots paying under 10 Rs.	41,600	RS. 1,65,008	10,234	RS. 40,836	RS. A. P. 3 15 6	400
Do. from 10 to 30 "	17,773	3,04,755	5,243	86,677	17 0 0	3,400
Do. from 30 to 50 "	4,566	1,61,276	1,267	46,017	35 8 7	7,100
Do. from 50 to 100 "	2,624	1,65,845	809	51,730	63 6 0	12,665
Do. from 100 to 250 "	977	1,27,929	331	44,484	131 13 0	26,300
Do. from 250 to 500 "	117	34,819	34	10,272	298 9 10	59,700
Do. from 500 to 1,000 "	10	6,349	5	3,110	630 9 7	1,20,100
Total ..	67,667	9,65,981	17,923	2,83,126	14 9 6	

Mr. Crole—continued.

From this statement it will be seen that no less than 60 per cent. of landholders are pauper ryots, holding lands assessed on an average at 4 Rupees, and yielding, according to settlement registers, about 800 measures, or 2,400 lb. of grain. Deducting one-fourth for the sists, and about one-half as much for payment of cesses and cost of agricultural implements, there remain about 500 measures, or about 1,500 lb. for consumption.

Now, a Hindu family, however poor, consists on an average of five persons, requiring about 4 lb. a day, so that the yield is barely sufficient for a year's consumption. It is therefore clear that all these petty ryots must, as a rule, make up the sum required for extra expenses by field labor to others by sale of ghee, generally the produce of a she-buffalo and by other ways.

The next class is not much superior to the 10-Rupee Puttadars. They hold land assessed on an average at 17 Rupees, yielding about 3,400 measures of grain. But most of them have undivided relatives in the family, possessing an interest in their lands.

The other classes of ryots may be put down as well-to-do classes, but even among them there are many instances in which the people are very much involved in debts, but this is generally due to causes other than those connected with their position as agriculturists.

Mr. Price.

I must confess that I do not quite understand this question. I take it, however, to mean that inquiry is made as to the general circumstances of the cultivating classes.

As a rule, in this district the cultivators, whether proprietors or occupying farmers, look mainly to the land as their means of subsistence. I do not in this category include the holders of puttahs below 10 Rupees, as these can hardly be held to be farmers in the proper sense of the word.

The ordinary ryot lives upon the produce of his land. Where he is a small holder, all the members of his family assist in agricultural operations; where he is a man of some substance, he employs, upon a monthly salary, farm-laborers to the extent that he requires. Any surplus remaining after deducting the cost of maintenance and the payment of the revenue due to Government or of the rent to the landlord is devoted to the purchase of clothing and petty luxuries. Any balance which then remains is spent either in acquiring cattle or land, or, if the ryot thinks that he has enough of these, is either buried or converted into jewels for the females of his family. It is only when the ryot has acquired as much as he thinks necessary in the way of cattle, land, and jewels, that, if he does not bury his money, he assumes the character of money-lender, and gives loans at heavy interest to his less fortunate brethren.

One peculiarity of the rustic of Southern India is his fondness for borrowing. He wishes to marry his daughter or to bury a relative and perform the funeral ceremonies, his riches consisting chiefly in grain, cattle, and so on; he goes to the village sowcar or the money-lending ryot, and borrows what is a comparatively high sum. It is a point of honor with him not to be niggardly in his display on such occasions, and he will obtain a loan for this purpose out of all proportion to his financial position, and incur thereby responsibilities which will hamper him for years.

Take, for instance, the case of No. 7 in the accompanying list. Although last year was one of famine,—and he cannot be called a rich man,—he spent Rupees 300 on his father's funeral ceremonies. He is a respectable individual of the fairly well-to-do ryot-class, and

Mr. Price—continued.

this fact no doubt led him into a decided extravagance. Had he been economical, the village would have commented upon it, and he been put to shame.

The list, which I now send, has not been prepared as I intended; time, however, will not allow of alterations. I had directed a collection of cases to be made all over the district, but in consequence of a misapprehension of orders I received replies only from Tahsildars, and they seem to have taken the better class alone. It is remarkable how large a proportion of those persons examined state that they have debts arising from the famine. That they have is very probably true, but I am inclined to think that these have been exaggerated, as I know for a fact that during the famine in the Cuddapah District, any one but a substantial ryot could not obtain a loan. I often made inquiries of the people on this point, and the almost constant reply was that the sowcars said that land was of no value, and that the cases of "alive to-day, dead to-morrow," were so frequent that they would not lend without substantial security. Nos. 7, 8, and 9, I took myself hap-hazard from ryots who came to my Cutcherry on other business. I wrote down what each man told me after having cross-examined him as much as I could to test the accuracy of his statements. I believe that the information obtained is fairly correct. Indebtedness is undoubtedly an institution of rural life in India; but I do not think that it is, as a rule, the result of the *want of means of living*, so much as of the inexplicable extravagance which mingles with marked economy in the life of the people of this country.

What the degree of indebtedness of the cultivating classes is, it is not possible for one to say or even estimate with any degree of useful accuracy. The period through which the country has passed has been of the most abnormal character, and the people have, since the famine has taken a turn for the better, gone to the money-lender for the means of starting again. The Law Courts are no test of the extent to which this has taken place, for the major part of these transactions will never appear before them, the loans having been received from wealthier ryots, friends, or relatives. I asked the most intelligent Native that I know in the district what he thought, and though himself a man of the legal profession, he told me that he could form no opinion.

Mr. Gordon.

The information required is supplied in a tabular statement of specimen instances taken from different taluks. Well-informed natives consider that from a half to two-thirds of the agriculturists are in debt.

The higher classes chiefly spend their savings in ornaments and the lower classes, such as Pariahs, Chucklas, Madigars, Boais, &c., spend them in drink. Debts are very often so large as not to admit of repayment within the debtor's life-time.

Among the reasons of debts are—

- (1.) Losses by bad seasons.
- (2.) Caste rules, which demand large expenditure on marriages, &c.

Mr. Wilson.

I can answer this question only in the most general manner, and only with reference to the district I know best—the Kistna. The ryots of the delta-irrigated villages of this district are as a rule in most comfortable circumstances; not a few are rich, and combine commercial with agricultural pursuits. The generality of the upland ryots are in fair circumstances so far as can be judged from external

Mr. Wilson—continued.

appearances; they are strong, hearty and healthy to look at. With hardly an exception every ryot, even the poorest, owns his own ploughing-cattle and implements of agriculture. There are few of the well-to-do ryots who do not own at least one bandy; those chiefly in use in the Western Taluks are known as "Oopara bandloo," small carts with wheels of solid stone or wood; they are not used much beyond the limits of the village. In the delta the dwelling-houses are chiefly of mud roofed with tiles or thatch; in places the ordinary mud hut has given way to a considerable extent to buildings of a more substantial character. In the Western Taluks the houses are of mud, or of stones in mud, with flat roofs constructed of wattle and dab.

I can give no opinion regarding the extent of the indebtedness of the ryots, but I know from my experience as a judge that the poorer classes of ryots are generally in the hands of the village sowcar, who advances the expenses necessary for cultivation, recovering them in kind at much a lower value than the market rate of the day.

The question embraces some matters that do not fall within the ordinary scope of settlement operations. Officers in charge of parties have been directed to make inquiries and give sketches of the kind contemplated by the question. These will be forwarded when received.

Mr. Goodrich.

In Zemindari tracts ryots generally hold puttass varying from Rupees 30 to Rupees 300. In wet lands they grow paddy as first crop and indigo, gram, and gingelly as second crop if a copious north-east monsoon has left water in the tanks. In some lands, if there are rain in the spring, oodalu and chamalu are grown before paddy is transplanted. In dry lands ragi, cumboo, and gingelly are grown as first crop, and after these are harvested the land is ploughed again and cholum, horse-gram and green-gram are sown. The ryot grows all the necessaries of his life on his land, or can procure them at the market by barter of his spare produce. Sufficient quantity of paddy and dry grains required for consumption of the family is preserved and the rest sold. The ryot grows cotton and gets his cloths woven. The lamp-oil plants grown in backyards and hedges will be ample to produce seed sufficient to make the oil required for his use. A ryot paying an annual assessment of Rupees 100 spends about Rupees 50 in manuring land, paying wages to hired laborers, purchasing salt and other expenses paid for in cash. The value of the outturn on the land may be estimated at Rupees 300. After deducting from this amount the annual rent and the land-cess (at the rate of half anna in the Rupee) there remains a balance of Rupees 150. Of this Rupees 100 will go towards household expenses and maintenance of his family, whose labor is the mainstay of the farm. The balance is spent either in lending, in paying interest on old debts, or in purchasing ornaments, or in celebrating marriages. The above estimate refers only to cases where the ryot gets an average crop. If the crops fail so that he has not a saleable surplus to the amount of his sist he will be obliged to borrow to pay the sist and must stint himself in food. The ryots in most cases have large families, consisting of from ten to twenty souls. They all work in the field, and hired labor is employed only at the time of transplantation and reaping. They generally live in thatched houses containing two or three terraced rooms (with clay ceilings and a thatch over all) to suit the requirements of the family. A ryot paying Rupees 100 rent keeps two or three pairs of bullocks and one or two cows, whose calves he sells. It used to be estimated that about one-third

Mr. Goodrich—continued.

of the farmers in the district were in debt, their debts amounting to half of their annual income.

It is believed that recent high prices have very greatly reduced the debts of the class.

Mr. Foster.

The condition of the agricultural classes varies exceedingly throughout the district in the delta; the ryots are generally well off, while in the hilly jungle tracts the people are very poor. In the delta the greater part of the produce of land is rice, and the ryots have to sell this to buy their other necessities with the money thus obtained; but in the upland parts a ryot will often get from his land almost all that he may require—food, cotton, oil; he can get his firewood from the jungle as also bamboos and posts for his house; he has no cultivation expenses as his family suffice for this; he has to buy no fodder for his cattle; he is always able to sell the milk he may not require, or at all events to give it in exchange for something else; but he is not able to save anything nor to keep a supply of food for a bad season. But then the jungles amongst which he lives gives him some food, which he has only the trouble of gathering; it is not so good and nutritious as his ordinary food, but it is enough to keep up his strength, but this cannot go on for two years without its telling seriously on him.

* * * *

Those who have surplus will either get ornaments made of it or keep it by them. They will generally borrow money on occasions of any marriage, and this will generally keep down the surplus; some will lend money; some few will invest their money in Government securities.

I suppose about a fourth of the agriculturists are in debt, but they do not on an average owe more than a year's income. With the high prices of last year, many of the ryots in the delta have been able to clear off their debts.

QUESTION 23.—Has there been within the historic period any sensible denudation of the forest in, or bordering on, your Province? Can it be tested by statistics showing over how much area forest or scrub jungle has been cut down? Can you state any specific facts which lead you to think that such deforestation has caused injurious effects in anyway, either in respect to the fall of rain, or the abundance or permanence of water in streams, or wells or the subsoil, or the denudation of the surface soil so as to render it unfit for cultivation? And what injury has been produced, and to what extent? Can you adduce any direct evidence that such injury as you think has been caused by the clearing of forest, has been remedied by its reproduction? If you think the clearing has been injurious, what steps would you propose to take towards reboisement? Should it be done by artificial planting, or by conservation of the tract, so as to keep out cattle-grazing and fires? Can such consideration be effected without interfering with any vested rights of the people, or with their consent, if interference is necessary? Which of the two methods would be easiest, cheapest, quickest of operation, and most effectual? To what extent and on how large an area could either method be followed?

Sir W. R. Robinson.

The advancement of population and cultivation has led to the substitution of agriculture for scrub and jungle through great tracts in South India of late years, without any evidence of injurious effects on the South-West or North-East Trades which supply South India with its moisture. The stratifications of the earth's surface which fill the country's springs—deep-seated enough to be uninfluenced

Sir W. R. Robinson—continued.

by surface verdure—and supply its streams have not changed ; and cultivated land has doubtless proved here as elsewhere a better absorbent of moisture than scrub and jungle-clad waste. Forests have not been arresting famines in India, nor has their denudation been affecting the solar heat in general in recent years. Human health has improved where formerly malarious fevers searched the pioneers of cultivation under jungle influences ; and the haunts of wild beasts have receded. I think therefore that this fashionable scare need not trouble the Famine Commission in relation to the failure of the monsoons and natural droughts arising therefrom. At the same time good and judicious forest conservancy and plantation are needed here as elsewhere for their own obvious reasons. But State forest conservancy will only be acceptable to the people, where it is pursued without traversing legal and prescriptive conditions, and is divested of confiscatory wrongs. The people, too, may be aided in the conservancy of their communal and private forests and jungles by judicious direction without traverse of prescriptive rights or advancement of novel claims by the State. I can only hope that fanciful famine indictments are not now to be added to the difficulties and theories of the forest question. As a famine question probably food areas may be preferred to forest and scrub areas ; and the Commission may be asked to consider the cross allegations—whether so-called forestry has increased the cattle mortality, destruction of manure and so on.

Mr. Pennington.

The denudation of the forests in this district has been the constant theme of complaint for many years, and it has been alleged that the violence of floods has been sensibly increased thereby. It is certain, at any rate, that last December was distinguished by two of the most violent floods ever known in the valley of the Tamrapurni. There has been no *reboisement* to speak of though some good has been done by an informal kind of conservancy. No doubt the proper remedy for the forests is *strict* conservancy of all the real jungles, sufficient space being left on the outer slopes for cattle-growing and firewood. Such conservancy can, in my opinion, be carried out without any *improper* interference with the vested rights of the people, which, however, require to be carefully *regulated*.

Mr. Gordon.

There has been no sensible denudation of forest in this district within recent times. The Sundur State is the part which contains most forest. This is being yearly felled, and no steps are taken to supply the place of the trees which fall to the axe. There are no statistics showing over what area scrub has been cut down.

The district may be said to be devoid of jungle, although scrub exists in parts. These tracts, if preserved, would probably bear jungle of some size. Measures are being taken to conserve a portion of the scrub in Gooty and Anantapur Taluks, and the experiment, if successful, will probably be extended. In this instance a sufficient portion of the tract will be left to the villagers for their use. Planting would be attended with great expense, except on the banks of perennial rivers, and would probably, except under such circumstances, fail to produce large timber. Owing to the stratum of rock to be found at a short distance from the surface, trees are stunted throughout such portions of the district as I have observed. In the black cotton soil nothing except the Babul and the Margosa appears to thrive. It is to be doubted if the hills in this district, except those in the Sundur State, were ever covered with jungle. Their rocky nature in many cases renders it very improbable that they ever

Chapter I.—Question 23.

[7]

Mr. Gordon—continued.

could have been so. Such statistics as exist go to show that there has not been any general decrease in the fall of rain for the last twenty years.

Mr. Stokes.

There has been denudation, especially on the low hills and their neighbourhood, near the large towns and villages. This continues and will do so till other sources of firewood are created. There has also been great destruction of jungle by fire. There are no statistics. No facts were on record showing the effect of this denudation. There has been no reproduction of forest. The remedies must be by replanting and conservation. The importance of vested rights has, in my opinion, been greatly exaggerated. A check ought to be put on free felling in Zemindari tracts.

Mr. Price.

There has ; but it is impossible, as regards this district, to state, as there are no books of reference or statistics available, what extent has been destroyed. When looking over some old letters a short time ago I saw reference to jungles which now no longer exist. I do not think from the look of the country that there ever could have been much real forest in it. It must have been pretty nearly all scrub. The cocoanut and bamboo were introduced within a very recent period, and so were the now all-pervading Casuarina and many other trees. The Striharikottah jungles, which now belong to Nellore, but which formerly were part of this district, were, within the memory of living man, dense thickets filled with deer and other wild animals. They, until a few years ago, were hacked to pieces for firewood for Madras, and have only lately been conserved. This district being so exceedingly flat, the only way in which deforestation would appear capable of affecting it would be by decreasing the rainfall. There are no facts obtainable to show whether this has occurred or not, nor has there been, as far as I know or could ascertain, any injury resulting therefrom.

My knowledge of the Salem District and its forests in which I took some interest extended over a considerable period. Within the eight years during which I was there I recollect large patches of jungle which, when I knew them first, were thick and heavy, giving cover to abundance of large game, completely cleared away for cultivation. I know of acres of forests hewn down for the railway, and of miles of it destroyed by fires, which, with a sufficient Forest Staff, could have been protected. I know of two spots where, within my own memory, there were springs which ran all the year round, and which in consequence of the felling of the jungle have been entirely dried up. One was on the Melgherry Hills, the other at a place called Kodagur. I have seen, during the showers of the south-west monsoon, clouds pass over a large open clearing, and be precipitated in rain the moment that they were over a sholah. I consider, from what I have seen, that forest does affect the rainfall. The clearing of forest, which is within my own knowledge, has most certainly affected the permanency of water in the jungle-streams, which are the feeders of the larger rivers, and I could personally point out the particular spots. In the northern portion of the Salem District, where the country is rolling and soil red earth, I myself know places where the clearing of scrub jungle for cultivation has led to the appearance of large nullahs which are constantly growing ; this, however, is not very extensive. It is as yet far too early for any one to form an opinion as to the effects of the reproduction of forest in spots where it has been cleared away. Efforts to this end have been largely made in the Cuddapah and Salem

Mr. Price—continued.

Districts, both of which I know well; but the forest which has by these means been raised is, as to that which preceded it, as a toddling child is to the full-grown man. I have not the slightest doubt that the clearing of the forest has exercised an injurious effect upon the streams. I consider as a means of *reboisement* that all hill-jungle should be conserved and that the cutting of timber or occupation of ground for cultivation for a certain distance along the margins of all streams should be prevented. I would at first combine artificial planting with keeping out cattle and fires, but I would not in restoring follow the course adopted for many years by the Forest Department, viz., planting in trenches or planting out and watering. The theory which I have long held is that in making up forest one should follow Nature as much as possible. She distributes seeds of different kinds in such places as are favorable for their germination and growth, and all that I would, therefore, do would be to collect large quantities of the seeds of jungle trees of the adjacent region, and just before the rain send men round with bags of these, and a mamotie and instructions, wherever there was a blank space and a favorable looking spot, to dig a small hole, sow seeds, and leave them to take their chance. I would keep out all goats and sheep; they and fires are fatal to young forest. Cattle are not so bad, but still they are better out of jungle until it is well up. This plan of sowing I tried in 1865 on the hill near Arcot Railway Station, but I was moved the next year, and I believe that my successors did not trouble themselves any further with the experiment. I did not see the hill for some years afterwards, but when I did, I could plainly perceive in places the effect of the one year's work. The Sub Collector, at my suggestion, is trying my plan on the low bare hills about Chingleput. In the Salem District I left comparatively small patches of jungle in the plains, *i.e.*, which I had made by ploughing the land and sowing broadcast such seeds as were suitable to the soil. I have recently heard that these bore the late drought well, and that they have grown up in a surprising manner. I have experimented upon trees of which in two districts I have planted altogether pretty nearly half a million in many ways, and I am convinced that the plan which I have mentioned is the cheapest and most effective. Sheep, cattle, and especially goats, *must* however be kept out for four or five years, and precautions against fire, by cutting rides and clearing them every year, must be taken. The question of the vested rights of the people is one which requires systematic treatment. In both the Salem and Cuddapah Districts there are miles upon miles of forest land which could be conserved without injury to the people, or depriving them of sufficient space for pasturage. The Native custom has been to consider all Government waste land, grazing ground, upon which any one who chooses may feed his cattle, &c., may hack the saplings to pieces to as great an extent as may please him and upon which, when he thinks it desirable to improve the pasturage, he may light a fire and burn up thousands of young trees in order to procure fresh grass. These may be called vested rights, but I do not consider them such. The destruction of the forest has gone on to such an extent over the parts of the Presidency with which I am acquainted, that it is high time, if any thing in the way of conservancy is intended, to take the matter in hand. It is quite possible to work this in such a way that the people, cattle, &c., shall be excluded from certain tracts until they have grown up to that degree at which grazing will do no harm, when another piece might be taken up. I would certainly not allow the people to have the "run" of the jungles in the way in which they for many years have.

Mr. Foster.

Considerable denudation of the forests is continually going on through what is called pôdu cultivation. The ryot cuts down the trees and burns them and sows his seed in the ashes. He sometimes sows a second crop on the same land, but he generally moves to another block after he has got one crop and burns the second block down. He will not come back to the first piece for about eight or ten years. I think, as a general rule, he prefers never to cultivate the same piece of land twice in his lifetime, provided he can find other pieces of jungle to burn.

Mr. Logan.

Enclosure No. I gives an approximate idea of the extent of forest cleared, within the last twenty years, for agricultural purposes. In Malabar, for a long period, promiscuous and injudicious felling of forest timber trees by private parties has been going on to a mischievous extent. No attempt is ever made to plant up the tracts thus denuded.

As yet, however, no *great* injury has been caused. In some places, a sensible diminution in the permanence of water in the subsoil is, I am informed, perceptible in the case of fields and gardens situated in the midst of detached hills on which there was formerly a good deal of scrub jungle now no longer in existence. As regards the rivers, however, deforestation has not yet, fortunately (except perhaps in the Cherakal Taluk), been pushed sufficiently close to their sources either to cause an appreciable diminution in volume, or to check a continuous flow of water throughout the year.

The best remedy that suggests itself to me for the evil threatened is to take steps to bring under conservancy as large an extent of the forest tracts as possible, either by private arrangement with the proprietors (for the largest proportion of the forests is considered as private property in Malabar), or, if necessary, by legislative interference under the Forest Act, 1878.

I do not, however, think that the time has arrived when further legislation should be had recourse to as far as Malabar itself is concerned, though possibly district officers on the eastern side of the ghats may have good reason to take exception to the denudation of the ghat forests situated in this district.

I think it is worth while considering whether we might not, with advantage to all, extend forest conservancy in the district by private arrangement with the proprietors where such exist. A good beginning has already been made, *e.g.*, in the case of the Conolly Teak Plantation near Nelambur on the bank of the Beypore river.

STATEMENT showing Acreage of Forest land in the Malabar District cleared for purposes of Cultivation during the last Twenty years.

Taluks.	Extent in Acres of Land cleared.	Remarks.
1. Cherakal	348,783 3 5	The extensive clearing in Cherakal was for Ponom (Kumari) cultivation. The land was not permanently cleared. Scrub jungle grows up in the years when there is no Ponom crop. In Wynad the clearing was chiefly for coffee.
2. Kotayam	20,230 2 0½	
3. Kurambranad	40,580 5 4	
4. Wynad	119,566 0 0	
5. Calicut	3,312 4 0	
6. Ernad	4,593 0 0	
7. Valuvanad	2,019 6 6½	
8. Palghat	13,695 0 0	
9. Ponani .. ..	..
10. Cochin .. ..	..
Total	552,779 4 15½	

Mr. McC. Webster.

There has been a very great denudation of forest in this district within the last forty years. We have no statistics showing over how much area forest or scrub jungle has been cut down, but lands are now miles away from the forests which, within the memory of man, were covered with dense jungle and were overrun with wild elephants. I do not know of any specific facts which lead me to think that the deforestation has caused injurious effects as regards the fall of rain, though it has had many evil effects which I will notice. The question has in this district attracted considerable attention, and I forward a report* on the agriculture of the district by Mr. W. Robertson, the Superintendent of the Government Farm,

* Omitted.

and some remarks* thereon by Mr. Wedderburn, the late Collector, who had had an experience of thirty-six years in India and of ten years in the district. I do not think the deforestation has affected the rainfall or the cultivation to any serious degree. The annexed extract† from the Settlement Report will show that seasons were often remarkably unpropitious before the forests were cleared. The situation of this district is however peculiar, being immediately behind the high ranges of the Western Ghats which turn the rains, and the rainfall has always been very scanty.

† Pages 17 to 19 of Mr. Clogstoun's Settlement Report.

As regards the supply and permanence of water in the streams, the people all say that the streams run dry much sooner now than they did formerly.

The deforestation and the clearance for cultivation of the waste lands (scrub or grass) has considerably diminished the grazing ground of the people, and they have in consequence to send their cattle further in the hot weather. The supply of firewood is also diminished, and in consequence straw and cowdung are burned, that ought to be put in the soil. No attempts at *reboisement* have been made in any systematic manner.

As regards *reboisement*, the subject must be considered, first, with reference to the Government jungles on the outskirts of cultivation; and secondly, with reference to the formation of village jungles.

With reference to the first subject, I consider that a limit should be put to the extension of cultivation, and that all the existing forests should be reserved, either as "close reserves" or as "protected forests," and that the people should be made to look to improved methods of agriculture on existing holdings to increase the supply of food-grains. In this district a large proportion of the ryots are men of no substance, are quite unable to permanently improve their lands, and have to cultivate them almost every year allowing but little land to lie fallow. The sooner the land falls into the hands of capitalists, and the present occupants become agricultural laborers the better will it be for the country. By allowing Government waste scrub or forest lands on the outskirts of cultivation to be taken up we afford an outlet for the increasing population and perpetuate the existing evil of small holdings and pauper land-owners and no fallows, while we permanently destroy the fuel and grazing grounds of the district. I consider therefore that all the existing forest or scrub land should be reserved and that no extension of cultivation should be allowed therein, and that when not closely reserved it should be worked on the block system and grazing allowed therein under the same system. No grazing whatever should be allowed in the "close reserves" and fires should be prohibited on both classes of forests. As regards the

Mr. McC. Webster—continued.

grazing grounds in these localities (outskirts of cultivation), it is perhaps necessary that they should be retained, but I consider that the grazing in such places should be discouraged as much as possible, as it should be our endeavour to get the people to allow their lands to lie fallow and to graze their cattle on them. At present the cattle of very many villages are kept in the hills and forests all the year round and are only brought down for cultivation when required, and are sent back as soon as the work is over. The manure is not collected and, indeed, if it were, could not be brought down, and in consequence is lost to the soil. What a loss this is, is apparent from the figures given in Mr. Robertson's Report for 1876-77, page 98 *et seq.*, and I consider that Government should use every means in its power to prevent the ryots from thus recklessly impoverishing the soil. I would therefore, if grazing is to continue to be allowed, charge a high fee per head of cattle grazed in Government forests and hills. This will have the effect of compelling the ryots to find grazing for their stock on their own fields and the manure would not then be wasted. This subject, however, more properly forms part of the answer to Question 7, and I only allude to it here to show one of my reasons for more strictly reserving the existing Government waste lands, giving them an opportunity of natural reproduction, and of preventing the increase of pauper cultivation. As regards village jungles, I consider that Government interference is urgently called for. Government have afforded the people of this country security for life and property—the increase of population has therefore been very great and it will continue to increase—and Government should, therefore, I consider step in and with legal sanction require the people to do something for themselves. I do not think it should be a question of interference with vested rights, these rights should give way to the general good; and if the people will not help themselves they should be compelled to do so. One very important matter is the formation of village topes to afford a fuel supply and grazing ground for the village. I consider that a plot of land should be selected in every village and that the villagers should be compelled to plant and keep up a firewood reserve therein; each landholder should be compelled to give labor or its equivalent in money, and the management of the plantation and the future use of the firewood should be in the hands of a village committee or punchayet. It would not be difficult to frame rules for giving practical effect to this proposal, the only preliminary being a legal enactment compelling the people to form and keep up the reserves. The grazing fees levied on cattle sent to the Government hills and forests might be ratably distributed as a grant-in-aid to the village committees.

Mr. Horsfall.

There has been a gradual and progressive denudation of forest. The testimony of all officers is unanimous on the point. It is a fact within the personal knowledge of every official of any service in the district. Formerly the Government ryot was not allowed to cut the trees on his puttah lands, but this restriction was withdrawn some years ago, and within my own knowledge many valuable trees, such as tamarind and mango, were cut down and sold. In some instances lands were taken up temporarily for the sole purpose of cutting the timber thereon, and as soon as this object had been effected thrown up again. This disastrous procedure has been checked to some extent by the rule that applicants for fresh lands have to pay the value nominally of the trees standing thereon. The rule is good as far as it goes, but is, I fear, very generally evaded. There are no statistics showing

Mr. Horsfall—continued.

the extent of forest or scrub jungle which has been cut down. Such lands were entered in the old accounts as Porumboke. Up to the time of the recent survey, the area occupied by forest or scrub jungle was not ascertained ; but there is no doubt that as cultivation has gone on increasing from year to year, the jungles have been encroached upon. Between Faslis 1271 and 1274 the cultivation of cotton increased from 100,000 to nearly 250,000 acres ; the greater portion of the increase is known to have been jungle taken up for cultivation.

The difference in area under occupation in Fasli 1269 when the Kistna District, as now constituted, was first formed and that under occupation in Fasli 1287, amounts to nearly four lakhs of acres being fourteen and eighteen lakhs, respectively. So far as is known there has been no diminution in the rainfall. A rain register has, however, only been kept since the year 1852 ; nor has any alteration been observed in the abundance or permanence of water in the streams, wells, and subsoil. No noticeable denudation of soil has occurred. The soil is said to have deteriorated to some extent owing to cattle dung being used instead of firewood which has become scarce.

There has been no reproduction of forest.

The matter is of general importance, and I would have a special Forest Department and would conserve all existing jungles and hills. This would be done most advantageously by conservation, keeping out cattle from grazing and prohibiting fires. So far as my experience goes, artificial planting, except under very favorable circumstances, has not been profitable. No doubt the right hitherto enjoyed of grazing at will throughout Government jungles would have to be curtailed to a considerable extent. But the object sought is the public welfare, and the blind, ignorant opposition of the people ought not to be allowed to outweigh the paramount importance of the step. I believe sufficient provision could be made to meet all just claims, and that the people would readily submit after a few years to a systematic course of conservation. Conservation would be the easiest and cheapest as well as most effectual method, but I would not entirely dispense with planting where advisable. In some tracts valuable timber trees might be grown in the place of existing trees of no value. Planting without strict conservation would be of no use whatever. The extent of existing jungles is estimated at 579,000 acres.

Rev. Mænnert and others.

Unfortunately the idea that destroying the forests injures the condition of the country is unknown to the people here. The devastation of forests is therefore going on under our eyes perpetually. Not only are the tracts extremely numerous where plants are struggling to grow up into trees and are kept under systematically continued destruction, so that since 20 years they have always offered the aspect of a low mutilated bush, which even is a characteristic feature of the landscape, resembling patches of heather ; but we know also of several places where 10 or 15 years ago regular woods with fine stems and undergrowth were standing, whilst now everything has been cut down to the shape described above. This destruction of forests is not only carried on for the sake of firewood, but chiefly for the sake of obtaining litter for the cattle, as straw is used for other purposes.

The leaves of the soil of the forest being collected for the same purpose the injurious effect is still more increased. One of the consequences is the great want of firewood in some parts, which

Rev. Manner and others—continued.

again takes its revenge on agriculture by causing cowdung to be burned as fuel.

About the effects of this denudation we have many surmises, but it is difficult in the individual case to argue the point conclusively. We see hill sides in which the subsoil dries up so very quickly that we think it would not be possible if there was a forest. We see deep ravines hollowed out by short water-courses, as, in some cases at least, it would not be possible, if there were trees or at least shrubs and especially leaves, ferns, &c., on the ground. Concerning the sudden rush and quick falling of water which is so very characteristic in the rivers of our district, we are inclined to attribute it at least partially to the same cause. We see places denuded of soil where the environs suggest the idea that these places have lost their soil only in consequence of loosing the growth of bushes which on the same tract further on are still in the process of being extirpated, whilst still further on patches which are protected by walls have bushes, trees, and good soil. Forsaken paddy fields and forsaken wells in higher sites are perhaps in this condition, in consequence of a drying up of former moistness.

In several instances we have seen, partly by experiments of our own, that on nearly denuded places forest can be reproduced simply by drawing a wall round to the tract, *i.e.*, by protecting the tract from further vandalic destruction; in which case, however, we were obliged to take separate measures against the periodical burning of grass. We have also seen quite barren places planted with numerous trees and shrubs and in consequence thereof a new soil collecting or the old soil improving very much. We see one instance before our eyes which demonstrates that the sandy sea-shore can be changed into a forest. In one or two cases we have tried to stop the downward rush of water by horizontal ditches on the hill side.

Without daring to enter on the question, whether more forest would not produce fever, we yet think that it would be a great benefit if, firstly, the tops of hills, secondly, the sandy sea-shore, would be covered with forest, either by simply protecting the tract or by planting certain trees which are particularly suited for the purpose.

Lieut.-Col. Beddome.

With reference to paragraph 23, Chapter I, of the circular

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| 1. North Coimbatore. | 7. Wynad. | published in G.O., No. 1374, |
| 2. South do. | 8. Nilgiri. | of the 5th August last, |
| 3. Salem. | 9. Nilambur, | I have the honor to forward |
| 4. Cuddapah. | (Malabar). | answers received from the |
| 5. Tinnevely. | 10. South Canara. | Forest Officers of the Dis- |
| 6. North Arcot. | 11. Trichinopoly. | tricts as per margin. |

The denudation of forests for actual cultivation, paying assessment, has not been very great during the last twenty years as I have ascertained from reports received from the Collectors and Forest Officers of all our districts, and it is of course very much greater in some districts than in others. In Wynad it is said to be 22,526 acres, and it has been very extensive on the Nilgiri. In the face of railways and an ever-increasing population, it must of course go on extending, and there is till ample room for much extension though of course there must be a limit. Revenue Officers will be too anxious to open out the hill tracts of their districts and realise a revenue from the land, and can scarcely be trusted entirely with the question as to what tracts are to be reserved. This should in future be almost entirely under the Forest Department, who should be respon-

Lieut.-Col. Beddome—continued.

sible to Government that the water-supply of the country is not affected to any great extent. Unless this reservation be placed under the trained and responsible department the very tracts which it is most desirable to reserve will often be the first to be alienated.

Coffee and tea bushes will never protect the soil and water-supply in the way that forest does; the soil being constantly broken up is washed away and there is no accumulation of humus.

Coffee appears to be anything but a permanent cultivation, as shown by the long list of deserted estates in the Wynad.

The practice of felling and burning hill forests for temporary cultivation (Kumeri) is most injurious to the country and must sooner or later be put a stop to altogether. In some cases this pays assessment, but there is much carried on illicitly of which no returns could be forthcoming. Only two or three crops (sometimes only one) are taken off the ground, which is then deserted and reverts to jungle but only again to be felled and burnt after a few years, each successive growth being poorer than the one preceding it, till in time the tract becomes the merest scrub, or bare rocky ground with scarcely any soil. This I have seen exemplified in many of our districts; and for further particulars of the gradual process I would refer you to my report on the Jeypore Hill Forests (recorded in G.O., No. 2521, of 17th August 1877), and to my last Report on the South Arcot Forests (G.O., No. 1189, dated 29th July 1878).

Mr. Ferguson, the Forest Officer of Nilambur, explains the process of forest gradually turning into the poorest scrub, and he states that 4,000 to 5,000 acres are thus destroyed annually in Malabar.

Messrs. Peet and Morgan, the Forest Officers of Coimbatore and Wynad, state that Kumeri holdings are often not the *bonâ fide* property of hillmen. They often belong to well-to-do ryots and merchants in the plains.

Apart from the question of the inroads of cultivation and the destruction of forest by felling and burning for temporary cultivation, there is the fact that almost all our dry deciduous hill forest tracts are rapidly deteriorating before armies of goats and cattle, constant fires, and the un pitying axe and bill-hook of every goatherd or cowherd. The jungles and grazing-grounds below the hills and often on the slopes have of late been cleared for cultivation, and the people now invade our mountain forests. This is a far more important question than either of the others, and cannot be grappled with except through a Forest Act. Cattle-grazing beyond the jungles or forests of village limits must be taxed, and under the supervision of this department, so that the graziers can be punished if they take axes or bill-hooks into the forests or light fires. Grazing must be restricted to certain tracts, and large tracts of forests must be reserved against it and fire, or only be open by blocks in rotation as can be arranged under scientific and systematic management.

Our forests are still vast, and it is not too late to introduce systematic conservancy which can only be accomplished with the assistance of an Act and strict rules; but the destruction has been rapidly increasing year by year since the introduction of Railways, and there is not now much time to be lost. Unless we shortly have a Forest Act and a regular system of reservation I feel certain that another two or three decades may materially alter the climatic conditions of many of our districts.

The Forest Department has only been in existence twenty-two years, and for its first decade or more it was only a department for

Lieut.-Colonel Beddome—continued.

the collection of the revenue from the forests belonging to the State. Of late years the more important questions connected with the upkeep of forests have attracted much attention, but the department has been, as a rule, utterly unsupported by any of the Revenue authorities; the native officials particularly have been in every way opposed to it, and have thwarted it in every way as they have suffered much in pocket and in influence by its introduction, and its rules have in every district, it is feared, been more honored in their breach than their observance.

It is possible that Government might deal with the State forests without the introduction of an Act, but even this is very doubtful. There are however vast tracts of mountain forest belonging or supposed to belong to private individuals, the upkeep of which as forest land is absolutely necessary in the future unless the water-supply and climate of the country are to be seriously tampered with and to deteriorate year by year. Government must be in a position to say that certain mountain forests, steep slopes or ravines protecting the water-supply must not be destroyed, that they must be treated as forests, *i.e.*, worked only to their reproduction, but not be cut down or burnt, whether they belong to Government or to private individuals.

The protection of every mountain stream is of more or less importance, but I may just mention two or three all-important questions which, if they do not receive attention very shortly, may bring much ruin on the country.

The magnificent evergreen forests protecting the slopes of the ghats in the Tinnevely District are now threatened with destruction for coffee; in fact the destruction has already commenced. Vast tracts of these are now acknowledged as the property of Native Zemindars, and if their clearance is effected the Tamrapurni river will suffer considerably. Tremendous floods and corresponding droughts must be the result and the district may be ruined. It will only be the work of time.

The vast evergreen forests on the mountains between Coimbatore and Manar are now threatened with destruction for coffee, &c. These protect the sources of the Bhavani river, and their destruction would seriously affect that river. It is not known whether these forests belong to Government or to a Malabar Nair who has lately claimed them.

The splendid evergreen forests on the mountains at the south-east end of the Cumbum Valley protect the sources of the Vaige and Shurli rivers; if these were destroyed it would bring ruin on the Madura District. Large tracts of these belong to the Gantamayaknur Zemindar, and some belong to this Government; but it is believed that Travancore disputes the right to portions of the "highway"—a most important tract with reference to the water-supply of the Madura plains.

The forests on the Nilgiri, Wynad, and Coorg have been rapidly disappearing, during the last ten or twenty years. If this destruction is allowed to go on the Cauvery river must in time be seriously affected. There are still vast tracts of forest, and many splendid forest-clad ravines protecting numerous streams, but what if they all go? And if there is no legislation on the subject and no official reservation to be guarded by a responsible department what is to prevent it? At the present rate of destruction there would be probably nothing left in another century or less.

Lieut.-Col. Beddome—continued.

Collectors can furnish returns showing the amount of forest-land cleared for cultivation and paying assessment during the last twenty years or so ; but this will not show the numerous tracts illicitly felled for hill cultivation, and no returns can represent the vast tracts of forests naturally deteriorating by reason of unrestricted grazing without supervision and fire.

To obtain any reliable specific facts as to the mischief caused by deforestation would require observation and data collected for a long series of years. The Forest Department is only of very late introduction into most districts, and little or no attention has ever been given to questions of this nature. The Revenue authorities seldom remain more than five or six years in any particular district, and they very rarely go into the mountain forests, or know what is going on in them. It is rather to other countries where statistics have been collected for many years, and where the forests have been allowed almost entirely to disappear (which is anything but the case as yet in India), that we must look for facts of this nature. The numerous books now being published on Forestry and kindred subjects in Europe and America are full of statistics of the mischief caused in many comparatively temperate countries by the destruction of mountain forests. Can it be doubted that the same destruction can go on in a tropical country like India without similar results? Considering our vast tracts of forests and our splendid chain of ghats and isolated blocks of hills it must be slow but it will be equally sure.

Mr. Turner, lately Assistant Agent on the Jeypore Hills, with only a four or five years' experience of the district, spoke to the drying up of streams caused by deforestation. Major Jago, the Officer in charge of the Nilgiri, and Mr. Morgan, lately in charge of North Coimbatore, speak to similar facts in their letters now forwarded. The clearing away of forests protecting a spring or head of a stream almost always dries it up, and the denudation of the forests protecting the slopes of ravines down which it runs seriously affects it, causing a great rush of water after heavy rain and corresponding diminution at other times. These facts are too patent to require proof, but can be established by most Forest Officers. To illustrate the ill-effects of deforesting steep mountain ravines I could mention nothing more appropriate than the Coonoor Ghat Ravine, the approach to the Nilgiri from Mettapolliem. I have been up and down this many times nearly every year since 1857 and watched the gradual destruction of the forest, trying hard to stop it, but with what result is very evident although Government have passed several orders forbidding the clearance of the forests (this is the result of forests being under the Revenue authorities instead of the Forest Department, and no one of course being responsible as the Revenue authorities are constantly being changed). When I first knew it, the ravine was all forest clad, both sides, and in the heaviest rain there was no very apparent wash of the soil, no land-slips or rolling-boulders, and the rivulets feeding the river down the centre of the ravine all running tolerably clear. Now the north-east slopes or the slopes above the road have been almost entirely deforested, and it is quite dangerous to go up the ghat during very heavy rain, which often occurs in October, November, and the beginning of December and sometimes in May. Boulders of rock of various sizes from several cwt. to 100 tons come rolling down rendering the old and new ghats impassable and destroying the bridges, and the soil in many places pours over the road like lava, and the water in the streams is of the consistency of cream. Most of this deforested land has been planted with coffee, and many people would argue with advantage to the

Lieut.-Col. Beddome—continued.

State; but the Forest Officer says steep mountain slopes like this must be protected from denudation for coffee as it is utterly impossible that the soil can last very long. The forest has now been replaced by coffee, and in the future coffee will be replaced by a rocky barren mountain slope with no trees or cultivation of any sort, and the State will then say how improvident our ancestors were. Tree-planting will then be too expensive, and though in the course of time protection and conservancy might even then cause the *débris* of grass and weeds, &c., to form a soil which in time would produce jungle and eventually forest, this would in any case be the work of centuries and perhaps in the face of such a rainfall impossible even to the length of time. Deforestation on the other slopes of the same ravine has now commenced. I mention this particular ravine as one with which most people in this Presidency are acquainted, and the mischief brought about in which has been noticed by many even casual observers. The same results, however, are occurring in all other steep ravines brought under the same treatment.

Artificial reboisement by planting on our mountain slopes and hills will be far too expensive, and we have not yet arrived at a stage when it may be said to be necessary. Natural reboisement by reservation of tracts against goats, cattle, and fire is all that is necessary, but to effect this a Forest Act is necessary and Forest Officers must have more power.

No forest conservancy could probably be effected with the consent of the people if they were consulted. They of course cannot be expected to think or care about the future. Present profits and present comforts and privileges are all they think of. It is the State that must take care of the future, and legislate so that the introduction of railways, an ever-increasing population and cultivation are not allowed to bring ruin on the country at a future date even though that date may be a distant one. It is difficult to say what the vested rights of the people are. They have never been defined and are for the most part only privileges which can be regulated or restricted by the State as circumstances require, and which, if not so regulated and legislated for, must rapidly disappear altogether as forests will cease to exist without systematic management and many restrictions. It is calculated, however, by this department that in most districts one-fourth or one-fifth of the hill forests might be strictly reserved without much undue interference with present privileges. Every year however will make the question a more difficult one. The sooner it is grappled with the better. It is with the private proprietors of forest that there will be the greatest difficulty. They of course will look to immediate profits, and if by cutting down or selling a forest they can realize a revenue, they will care nothing what may occur in the future from such action. This is a subject that can only be touched by special legislation.

QUESTION 24.—Can any estimate be made of the number and proportion of deaths, which are the inevitable consequences of famine, not being due directly to starvation, but to such privations as adults in health can bear with safety but which prove fatal to children or the old and sickly, or to such diseases as follow in the train of famine from eating unwholesome food, roots, berries, leaves, &c., or arise from other and obscure causes like cholera and fever commonly concomitant on famine? What statistics exist as to past famines to show the depopulation that they have caused, and how far it is due to an increased death-rate, to emigration, or to a decreased birth-rate? If any special census was taken after the famine, state whether any trustworthy information was

obtained as to the different classes of population which have suffered most; whether the early stages of a famine affect certain classes more or less severely than its later stages; whether the loss of life has been greater among males or females, among adults or children; to what extent the birth-rate has been affected; and how far local influences, peculiarities of administration, or tenure, climate, soil, water, density of population, systems of cultivation, &c., have tended to mitigate or intensify the inevitable effects of scarcity.

Sir W. Robinson.

Is practically answered by the Famine Census. But census of the 1881 must be awaited to enable estimates to be formed as to the incidence of famine as respects classes, ages, &c. I venture to submit to the Commission two Minutes recorded by me, under dates 27th May and 14th October 1878, on the Famine Test Census taken in March last.

Mr. Grose.

I am collecting statistics about the deaths which occurred during the famine, but have no information before me now which enables me to answer these questions. A special census was taken in one taluk (Gudur), but no attempt was made to distinguish between classes of the population or to elucidate the other points raised in this paragraph. From the figures I gather that the percentages below the estimated amount of the population found by adding an annual increment of $1\frac{1}{2}$ per cent. to the figures of the census of 1871 are—

Males above 10—19 per cent.

Do. 10 and below 32 per cent.

Females above 10—14 per cent.

Do. 10 and below 31 per cent.

My own observations lead me to believe that the classes which suffered most were the pariahs, chucklers, yanadies, the laboring classes.

Famine was certainly alleviated to a greater extent in ryotwari tracts than in zemindari tracts.

I think the only way to form an idea of the number of deaths which must be ascribed to famine is to calculate what the population would have been if there had been no famine, and take the difference between that theoretical number and the actual number found to be in existence after the famine as attributable to it.

Mr. Price.

I do not consider that it is possible to form any accurate estimate, such as that alluded to. There are no statistics excepting the accounts of deaths in poor-houses which would give the causes of decease. These might give one some data upon which to work; so would the register of deaths for a period embracing an average of, say, five years before the famine, compared with those of the famine period, but still these could not be taken as absolutely accurate. Cholera and fever might be gauged with moderate correctness, but even then it would be difficult to separate deaths really caused by cholera from those resulting from famine diarrhoea. I have seen cases of the latter which strongly simulated cholera, and I feel sure, too, that the police and village heads often put down to cholera or fever starvation cases, as they knew that, if they admitted or recorded evidence of the real cause, they would get into trouble. How far death arose from unwholesome or insufficient food it is utterly impossible to calculate. It is possible to say that one period as compared with another exhibits a very great increase in the death-rate, and as it is known that this increase took place as famine grew in

Mr. Price—continued.

intensity, to derive the assumption that the major portion of this increment was the result of the existing distress; but it is entirely beyond the power of any one to divide the deaths amongst the many causes arising from famine; that is to say, that so many were attributable to acute starvation, so many to chronic, so many to bad food, and so on.* There are no statistics of past famines in this district which would show their effect on the population. The last great famine was in 1833, and I have often heard from natives and officers who were senior members of the service when I entered it that the mortality was then frightful. A special census of one taluk of the district (Poneri) was taken in March last, but this was merely a numbering of the people, cattle, and houses, and, beyond showing that, as compared with the census of 1871, there were so many persons, cattle, and houses the less, no information is obtainable from it.

Mr. Pennington.

I see no use in attempting to draw an impossible distinction between the case of those who died directly for want of food and of those who died of diseases directly induced by deficient or improper food. Death in both cases was, in fact, the consequence of insufficient nourishment or, in other words, starvation. No census has been taken of the famine tracts.

Mr. J. G. Horsfall.

In this district almost no deaths were attributed directly to famine. The total number of deaths registered since June 1877 of persons receiving relief amounts to 620, but the return does not distinguish between adults and children, male or female. The mortuary return of the last five years, Statement No. appended, goes to show that mortality was pretty equally distributed between males, females, and children. If any thing, the mortality was greater among males than females. The excess of deaths in the years 1876 and 1877 may be fairly attributed to the usual concomitants of famine.

Vide answer to Question 2 as to the effect of the great famines in the years Nandana 1832-33 and the previous one of 1791. No special census appears to have been taken after these famines. The taluk of Gudivada, for which a census was taken this year, was essentially a non-famine taluk, and, as might be expected, showed an usual increase of population owing chiefly to immigration from less favored parts, and partly no doubt to the increased area brought under ancient irrigation in recent years. The Gudivada Taluk was exceptionally prosperous. The census, therefore, taken for this taluk cannot be accepted as any criterion of the district generally. But for the ancient irrigation, the Gudivada Taluk might have been as bad as the Narsaraopett and Vinukonda Taluks where distress was most felt.

Surgeon C. J. Macnally.

Assuming that "starvation" in the first question of this paragraph means death from *acute* starvation, or, in other words, complete or almost complete deprivation of food, I think that a tolerably accurate estimate may be made of the number of deaths caused by famine. Such an estimate may be found either upon (1) the usual mortuary Returns or (2) a census.

It appears to be taken as an axiom in this question that "such privations as adults in health can bear with safety, but which prove fatal to children or the old and sickly," are frequent in time of famine.

Surgeon C. J. Macnally—continued.

It is undeniable that such privations may, and sometimes do, occur ; but conditions and degrees of privation are so various and so difficult to gauge and to classify that it must be impossible to recognise in practice such fine-drawn distinctions. Conditions which healthy adults may bear without detriment, but to which the young, the old, and the sick must succumb, are conceivable, but practically they do not occur in famine. Not physiologists alone, but most men who have had practical experience in famine administration, must have observed that privations which kill children and the old and sickly in large numbers cannot be borne in safety by healthy adults.

At the period when the mortality of the aged and of children has become alarming adults invariably suffer, although to a lesser extent.

In the famine districts deaths beyond the usual number attributed to dropsy, debility, anæmia, diarrhoea, dysentery, and ulcer should be put down as the more or less direct result of famine. It is evident that insufficient or improper food also predisposes to the reception of, and increases the mortality from, other diseases, such as fever and cholera.

I believe that not a few of the deaths attributed to cholera were due to "famine diarrhoea." I have seen cases of diarrhoea or dysentery, both in poor-houses and at relief-works, put down as "cholera" by Hospital Assistants and others.

It would not be correct in my opinion to attribute to famine *the whole* of the excess of fever mortality. There can be no doubt that many fell easy victims to fever owing to their half-starved condition, but at the same time it must not be forgotten that when rain comes after a long drought fever is apt to be unusually prevalent and virulent.

These remarks have reference chiefly to the conclusions deducible from mortality returns, but the registration of deaths has not been perfect ; therefore an estimate founded on such returns can be quite reliable.

The experience of poor-houses, however, when deaths were carefully recorded is of great value because it demonstrates that diseases directly resulting from famine were very common and did cause enormous mortality. This experience goes far to prove the correctness of the *primâ facie* inference that the actual mortality from famine is correctly represented by the loss of population (allowing for natural increase since last census) demonstrated by the census recently taken, by order of the Government of Madras, in certain parts of the famine districts.

If from the results of this census deductions be made on account of (1) unusual mortality from cholera and small-pox, (2) diminution of the number of births during the famine, and (3) emigration, we shall have as true an estimate as can be made of the number of deaths due to famine—

(1.) Mortuary returns of doubtful accuracy afford the only guidance for estimating the mortality from epidemic disease, but it is certain that a considerable proportion of the actual mortality from this cause was the indirect result of famine.

(2.) Besides the ordinary not very perfect returns of births, the Sanitary Commissioner has been furnished with statistics of the number pregnant among women receiving relief. Among 18,779 women inspected by me 274 (1.459 per cent.) were pregnant. The diminution of the number of births during the famine must sensibly lower the estimated increase of population since last census.

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Surgeon C. J. Macnally—continued.

(3.) The effect of emigration might be disregarded. It must be very small indeed, for the arrival of wanderers from other places compensated for the loss of population due to persons leaving their homes. There is reason to believe that the greatest mortality occurred among wanderers. Emigrants to the Nellore Canal had been sent to their homes before the census was taken.

Rev. Chester.

"To what extent the birth rate has been affected?" My own observation during the famine in that part of the Dindigul Taluk with which I have most to do leads me to note the marked difference in the number of pregnant women. I noticed this fact also in the Dindigul relief camp during the eleven months it was in operation, and where there was a total of 6,903 different women. In the lying-in hospital at Dindigul, where those from the town are the principal admissions, there was a smaller number received than usual, but the difference was not so marked as in the case of the trained native midwife from the Dindigul Dispensary who has been for some years working in the villages near Dindigul. During a period of one-and-a-half years, when the distress for food was most marked, the total of her cases fell off to about quarter of the usual number. A marked case of the effect of the famine upon women presented itself at the Dindigul relief camp on the day Dr. Cornish visited the camp. A young woman, about nineteen years of age, who had with her in the camp a child four years old, which she had brought up on her own milk, attracted our attention from the fact that there was hardly the appearance of breasts. In her case there was almost an entire absorption of the mammary glands as in the case of an old woman.

Surgeon Lancaster.

I do not consider that any safe estimate can be made of the number and proportion of deaths which are the inevitable consequences of famine not being due directly to starvation.

The secondary effects of privation and want are very serious; they induce diseases most intractable in their nature; they lower the constitution and impair the vital powers, and predispose to various diseases of the respiratory and digestive organs. I cannot form any exact estimate of the deaths from these causes, but my experience in the civil hospital, jail, and relief-camps plainly shows me that the deaths from these secondary causes are disastrously large. Fevers and ulcers are more common in the famine districts than in others, and the number of deaths from these causes is proportionately large.

Dr. Cornish.

This question in regard to its first clause cannot be clearly answered. An attempt was made by the Orissa Famine Commission to obtain the mortality under two heads—1st, deaths directly due to famine; 2nd, deaths indirectly due to famine—but the failure was complete.

The registered causes of death are not in any degree trustworthy, but this much is certain, that in the famine areas the people died (in round numbers) in three times the proportion they did in non-famine districts during the year 1877. I have shown in my annual report for 1877, and illustrated by diagrams, that there was a very close correspondence between prices of food and mortality in the famine area, and as excessive mortality was confined to the famine area, or districts bordering thereon to which the people fled for help,

Dr. Cornish—continued.

there can be no reasonable doubt that the excess mortality was famine mortality and nothing else.

The use of the term "starvation" in this question is not clear. There are two distinct forms of starvation recognized by all authorities—"acute starvation," where persons are deprived for a time of all nutriment whatever; "chronic starvation," in which the daily food is insufficient in quantity or quality for the repair of the daily waste of the body. Acute starvation is a diseased condition admitting of relief if the victims are seen in time and judiciously treated. "Chronic starvation," which has continued so long as to cause severe bodily wasting, is practically beyond remedy. It is the latter form of starvation that famine administrators have to deal with. Owing to a want of precision in description, non-professional persons have generally confused the results of the two forms of starvation. They have noticed that coal miners shut up in the works or shipwrecked mariners have recovered after being totally deprived of food for several days, and it has apparently been surmised that partial rations of food continued for weeks and months could be borne by the famine-stricken with impunity. History and physiological science give no warrant for such an opinion. In applying the term "starvation" in connection with famine, "chronic starvation" is always implied. This form of the disease is so much the worse than acute starvation that in the one case food judiciously given will restore health and strength, while in the advanced forms of the other the most costly of nutritious dainties are powerless to restore vitality. I have commended elsewhere on the want of precision in the use of the term "starvation."

I am not aware of any experience showing that adults in health can bear food privation "with impunity" which prove fatal to children or the old and sickly. My personal experience went to show that in the early period of the distress the earliest victims were the old and the young of the laboring people. But, as these classes are not bread-winners, the probabilities are that they were the first to be stinted in their daily food. As the distress increased and the food became more difficult to procure, the adult men and women broke down just in proportion to the degree of privation to which they had been exposed. All that can be safely stated in regard to the superior endurance of adults is that, having a greater stock of vitality than the old, they necessarily can hold out for a somewhat longer period under an equal amount of privation, but our jail experience altogether opposes the notion that even as regards these classes they can bear "chronic starvation" for prolonged periods with impunity. At page 81 of my report for 1877 is given a table showing mortality of the general population according to age, and it will be seen that the proportion of mortality of children from one to six years had increased from twenty-nine per mille in 1876 to fifty-eight in 1877; of children from six to twelve years, from eleven per mille in 1876 to thirty-two per mille in 1877; of adults from twelve to fifty years from sixteen per mille in 1876 to forty per mille in 1877; and of old people above fifty years from sixty-seven per mille in 1876 to one hundred and sixty-six per mille in 1877. Of all these classes of the population the proportion of increased mortality was lowest in children under six years of age. This I suspect was owing to the decreased population of young children from diminished births.

This clause of the question assumes as a fact that adults can bear a greater degree of privation than the old and young, but the experience of the famine and an analysis of the proportions of the popu-

Dr. Cornish—continued.

lation returned as dying at various ages in 1877 does not entirely bear out the assumption.

In my opinion it is only fair to debit all excess of mortality in famine areas beyond the ascertained mean of ordinary years to famine either as directly or indirectly connected with failure of food supplies. It is quite impossible to draw any line and say "this is a famine death pure and simple," and of another "this is a death indirectly due to the famine." Famine brings about so many abnormal condifious, *e.g.*, bad water, bad housing and clothing, promiscuous herding of the people on works, and exposure to communicable disease, that no one, however desirous of arriving at the truth, could satisfactorily classify the mortality in the way suggested. Thousands of persons, for instance on relief works, fell victims to cholera, small-pox, and fevers, who, if they had remained in their own villages and in their own occupations with an adequate allowance of food, would probably have been alive to this day. Famine means agglomeration of the population under peculiar insanitary conditions as well as dearth of food.

QUESTION 25.—If no such census was taken, state what information is to be got from the mortuary returns for the period embraced by the last famine in your province as compared with those for ordinary periods, and what conclusions may be drawn from those returns.

Mr. Longley.

No special census was taken after past famines (*vide supra*). The decrease indicated by the recent census with reference to the present famine must, I think, be set down mainly to deaths. Emigrants and wanderers to other districts do not, I think, bear any considerable proportion to the total. I am trying to get some reliable information in reference to the numbers who left the district in search of employment and the numbers that have returned and the reason of the others not returning, and will forward this later on. The deaths as reported in the mortuary returns were as follow :—

During the famine of 1877, from December 1876 to					
February 1878 ..	..	..	..	..	1,97,951
Average for fifteen months	..	..	..	..	59,002
					<hr/>
					+1,38,949
					<hr/>

Mr. Pennington.

It appears from the mortuary returns of the past eight years that there were only 26,289 births registered in 1877-78 against an average of 34,251 for the previous three years, or a decrease of 23 per cent. The deaths, on the other hand, reached 70,704 against 45,092 in the previous year, and an average of 30,832 *excluding* these two bad years. It is impossible to doubt that both the falling off in births and the great increase in the death-rate are due to insufficient nourishment, and it is interesting to observe that, whilst the death-rate was abnormally high every where, the falling off in the birth-rate was most conspicuous in the most distressed taluks as shown below.

BIRTHS.

Taluks.	1876-77.	1877-78.	Percentage of Columns 3 to 2.
1	2	3	4
Ambasamudram	2,852	3,398	+ 19
Tenkasi	2,475	2,691	+ 8
Tenkarai	4,710	4,332	— 8
Tinnevelly	2,021	1,840	— 8·9
Nanguneri	3,329	2,988	— 12·4
Sankaranainarkovil	4,758	2,869	— 39·7
Srivilliputtur	4,317	2,390	— 44·6
Satur	3,152	1,555	— 50·6
Ottaipidarum *	5,938	2,556	— 57
	33,552	24,619	— 26·6

DEATHS.

Taluks.	Average Death of six Years from 1870-71 to 1875-76 (both inclusive).	Deaths in 1877-78.	Percentage of Columns 3 to 2.
1	2	3	4
Srivilliputtur	3,206	10,404	325
Satur	2,813	7,765	276
Sankaranainarkovil	3,153	8,267	262
Nanguneri	2,944	7,490	254
Tenkarai	3,615	8,982	248
Ottaipidarum	5,337	11,477	215
Tenkasi	2,274	4,605	202
Ambasamudram	3,176	5,080	160
Tinnevelly	2,642	3,574	135

Mr. Atkinson.

The following are the figures obtained from the mortuary returns for the period embraced by the last famine:—

Taluks.	Number of deaths from Nov. 1876 to Mar. 1878.
Badvel	8,027
Sidhout	8,507
Pulivendala	10,517
Cuddapah	11,989
Pullumpet	16,629
Jammulamadugu	9,146
Prodatur	8,055
Rayachoti	18,001
Kadiri	18,205
Voyalpad	26,517

Mr. Price.

Enclosed is a table* which, with the help of my Assistant, Mr. Rathnavelu Chetti, I have had prepared from the records of my office.

* Not printed.

The comparison which it institutes is one between the average of four years prior to the famine and the actual period of distress. As the sexes were not distinguished until four years ago, and as I wish to give as much information as possible upon the points raised in the question under reply, I could not for my average go further back than I have. The statement, it will be observed, refers to two periods, viz., one which embraces that from the commencement of the famine to its climax, and the other from the climax to the present time. Though it cannot be said that the birth and death returns are absolutely accurate, especially as regards births, I think that they may be held to be fairly so.

The statement affords the following conclusion :—

- (1.) That the famine in this district began to manifest itself in the month of December 1876 by a distinct increase in the death-rate and an equally distinct decrease in the birth-rate.
- (2.) That this effect continued and steadily increased until the month of August 1877, when the famine, as indicated by the death-rate, attained its climax.
- (3.) That the months July, August, and September 1877 were the periods of greatest distress.
- (4.) That the months of the first burst of the famine and its climax have produced in the periods during which children conceived in those months should be born a most marked fall in the number of births, thus tending to show that the periods of most marked death-rate corresponded with a general failing of physical strength in the population.
- (5.) That the number of deaths of males was greater than that of females, and that the disproportion was much higher than that observable in average years, and grew larger as the distress increased.
- (6.) That persons above the age of 40 were those who suffered most, that children came next, and that those in the flower of their age suffered least all through.
- (7.) That in March of this year the apparent effect of the famine upon the death-rates ceased, and that it may be remarked that the decrease of deaths was in the number of persons in the first period of life,—a fact which may perhaps be attributable to a smaller number of children having been born in previous months.
- (8.) That it has not been until the month of July that the births have commenced to balance and exceed the deaths.
- (9.) That the total increase of deaths from December 1876 to February 1878, inclusive, as compared with the average was 43,843, or 37,248 per mille per annum, and that the decrease in the number of births, up to the close of July, *i.e.*, when the apparent balance was restored, was as compared with the average 15,823, or 10,146 per mille per annum.

It may be remarked, as regards the sudden leap taken by births in the month of July 1878, that July, August, September, and October are, in ordinary years, those months in which a marked increase in births takes place. This circumstance follows a law of which no doubt medical men have a ready explanation.

Mr. J. G. Horsfall.

The mortuary return referred to above shows that there has been a large increase in mortality during the past two years as well as decrease in the number of births. The excess and decrease of these two respectively may be fairly attributed to famine. For the two taluks Vinuconda and Narsarowpett this is shown as under :—

Taluks.	Average Number of Deaths per annum.	
	Ordinary Year.	Famine Year.
Vinuconda	911	1910
Population 64,508.		
Narsarowpett.. .. .	1,375	3,000
Population 120,619		

Dr. Cornish.

There are no statistics of mortality of past *famines*. Although the periodical census-taking of the population from 1822 to 1871 indicates the effects of the famine of 1833-34 and of more local scarcities in checking growth of population. The subject as regards the famine of 1833-34 is dealt with in the accompanying paper marked C "influence of famine on growth of population").

In the special census taken after the famine in March 1878 no inquiries were made in regard to the social condition of the survivors. The object of the census was to test the actual losses of the population in regard to sex and age, and as shown in accompanying paper maked A (letter No. C-13, dated 20th June 1878,) the results showed a greater proportionate loss of males than females, by about five per cent. in the famine area and a greater disappearance of male and female children under ten years than above that age. The facts in reference to this question and also in regard to comparative loss of life in males and females, adults and children, migration of people and effects of famine on birth rates, are so fully discussed in the accompanying papers that I should only waste the time of the Commission by going over the ground again. I wish to add only this remark in regard to effect of famine on birth rates, that whatever may be the importance of the observed facts, I claim for myself whatever merit or demerit may attach to the originality of the observation.

The mortuary returns for this Presidency are shown in the annexed table month by month for a period of five years before the famine and throughout the famine period up to June 1878. The conclusions I draw from these returns are that in ordinary years they are imperfect and that in a period of general paralysis of village administration like famine, they are worse than in ordinary years. In several of our famine districts, notably in Madura, Nellore, Coimbatore, Bellary, Kurnool, and Cuddapah, the death registration did not fairly and truthfully represent the famine mortality. A table of birth registration is also appended, showing results separately for famine and non-famine districts, for a period of five years before the food distress, and continued down to June 1878.

Chapter I.—Question 25.

Dr. Cornish—continued.

[27]

ABSTRACT of Births* registered in Madras Presidency, 1872—78.

14 FAMINE DISTRICTS.

Months.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
January	22,446	21,653	22,709	27,425	26,224	24,826	12,126
February	20,563	19,360	19,980	26,030	24,926	21,329	9,990
March	24,018	24,255	24,351	30,769	28,700	23,788	9,907
April	24,645	24,845	26,471	31,372	30,241	24,619	9,005
May	26,207	26,951	26,911	34,497	33,595	25,528	9,432
June	28,902	27,204	32,233	34,786	34,339	25,143	10,209
July	34,977	34,207	37,262	39,129	41,136	26,584	..
August	34,203	31,587	36,021	37,153	39,324	23,344	..
September	33,840	32,845	35,528	36,073	39,035	19,426	..
October	33,808	31,330	35,780	37,571	37,697	18,440	..
November	29,978	29,082	32,583	33,258	34,061	16,367	..
December	26,956	27,806	32,034	30,925	29,771	14,963	..
Total ..	340,543	331,125	361,863	398,988	399,049	264,257	60,669

7 NON-FAMINE DISTRICTS.

January	15,374	13,232	14,972	16,763	16,157	15,177	14,601
February	15,040	11,687	13,155	14,665	15,865	12,562	11,911
March	16,068	13,213	14,661	17,970	16,054	14,406	11,851
April	16,516	14,421	14,615	18,470	17,771	16,299	12,798
May	17,688	15,809	18,152	19,428	18,433	19,526	14,549
June	17,694	17,432	17,812	20,265	20,720	19,341	15,717
July	19,675	20,065	20,908	21,931	23,096	22,578	..
August	19,607	19,759	21,271	23,484	22,209	20,966	..
September	18,188	19,876	20,387	22,920	22,631	19,279	..
October	17,896	18,559	19,472	22,246	21,246	9,101	..
November	15,986	17,603	19,477	21,189	20,497	17,200	..
December	15,631	16,795	18,884	20,452	18,385	16,755	..
Total ..	205,261	198,451	213,766	239,783	233,064	213,190	81,427

TOTAL MADRAS PRESIDENCY.

January	37,820	34,885	37,681	44,188	42,381	40,003	26,727
February	35,603	31,047	33,135	40,695	40,791	33,891	21,901
March	40,084	37,468	39,012	48,739	44,754	38,194	21,758
April	41,161	39,266	41,086	49,842	45,012	40,818	21,803
May	43,895	42,760	45,063	53,925	52,028	45,054	23,981
June	46,496	44,636	50,045	55,051	55,059	44,484	25,026
July	54,652	54,272	58,170	61,060	64,232	49,162	..
August	53,810	51,346	57,292	60,637	61,533	44,310	..
September	52,028	52,721	55,915	58,903	61,666	38,705	..
October	51,704	49,889	55,252	59,817	58,943	37,641	..
November	45,964	46,685	52,060	54,447	54,558	33,567	..
December	42,587	44,601	50,918	51,377	48,156	31,718	..
Total ..	545,804	529,576	575,629	638,771	632,113	477,447	142,096

* Exclusive of births in the Zemindaries of Madura District.

Chapter I.—Questions 25 and 26.

[28]

Dr. Cornish—continued.

ABSTRACT of Deaths* registered in Madras Presidency, 1872—78.

14 FAMINE DISTRICTS.

Months.	1872.	1873.	1874.	1875.	1876.	1877.	1878.
January	26,137	30,473	29,871	34,539	40,991	95,837	86,245
February	20,664	24,660	21,514	28,060	35,613	85,845	52,366
March	21,864	26,679	24,134	28,709	31,285	83,127	45,007
April	21,517	25,343	23,111	27,885	33,256	71,481	34,026
May	22,118	24,636	23,137	27,675	33,583	85,282	32,770
June	21,970	23,071	24,878	26,278	34,212	86,157	31,767
July	25,538	25,550	29,997	35,846	38,050	123,825	..
August	26,419	25,585	27,786	40,237	33,545	145,209	..
September	26,074	26,344	26,481	41,827	30,230	142,634	..
October	26,409	27,724	27,730	43,447	28,582	118,505	..
November	27,544	30,647	30,541	46,192	36,743	124,833	..
December	29,728	32,581	37,494	48,115	68,648	122,552	..
Total ..	295,982	323,293	326,674	428,810	444,738	1,285,287	282,201

7 NON-FAMINE DISTRICTS.

January	14,064	18,319	18,303	16,814	20,971	20,358	22,466
February	12,383	13,955	14,696	13,858	19,819	18,872	18,614
March	12,673	13,908	15,586	13,991	16,252	20,525	21,412
April	13,567	13,507	13,972	13,897	15,988	17,652	19,820
May	16,246	12,851	14,554	15,019	18,113	18,804	19,947
June	16,681	13,029	15,300	18,255	22,538	22,360	21,637
July	21,666	14,927	17,763	25,622	27,463	26,894	..
August	25,766	15,415	17,133	20,026	21,449	28,724	..
September	21,563	15,073	15,519	17,894	17,435	25,360	..
October	17,333	14,474	13,875	17,774	16,471	23,117	..
November	16,010	18,626	14,284	18,738	19,768	23,560	..
December	18,548	19,517	19,189	20,559	19,379	24,799	..
Total ..	205,500	183,601	190,174	212,450	235,646	271,025	123,896

TOTAL MADRAS PRESIDENCY.

January	40,201	48,792	48,174	51,353	61,962	116,195	108,711
February	33,047	38,615	36,210	41,918	55,432	104,717	70,980
March	34,537	40,587	39,720	42,700	47,537	103,652	66,419
April	35,084	38,850	37,083	41,782	49,244	89,133	53,846
May	38,364	37,487	37,691	42,694	51,696	104,086	52,717
June	38,651	36,100	40,178	44,536	56,750	108,517	53,424
July	47,204	40,477	47,760	61,468	65,513	150,719	..
August	52,185	41,000	44,919	60,263	54,994	173,933	..
September	47,637	41,417	42,000	59,721	47,665	267,994	..
October	43,742	42,198	41,605	61,221	45,053	141,622	..
November	42,554	49,273	44,825	64,930	56,511	148,393	..
December	48,276	52,098	56,683	68,674	88,027	147,351	..
Total ..	501,482	506,894	516,848	641,260	680,384	1,556,312	406,097

* Exclusive of deaths in the Zemindaries of Madura District.

Question 26.—It has been laid down by the Government of India as a settled principle that local financial responsibility should be enforced in the case of a famine as far as possible. With this view special taxation has recently been imposed on the country, the proceeds of which the Government has proposed to apply as a mutual assurance fund which will be available for the benefit of the people on whom the calamity of famine may actually fall. But it has been recognized that it would be preferable if some portion of this taxation could be made more strictly local, both in its levy and its application to relief purposes. Can you suggest any way by which it might be rendered practicable to provide that where State funds have been

expended on the relief of famine, such expenditure should be recovered from the locality which has benefited by it under any system of (taxation in modification of, or in substitution for, that recently adopted, and not in addition to it) in a manner that should bring into operation a sense of local responsibility, first in the direction of securing the lives of the people, and, second, of protecting them from unnecessary expenditure on relief? How could such a principle be applied to a smaller area than that of a Province or Presidency? Could the expenditure in a single district, or sub-division of a district, be recovered from that district or sub-division by such special taxation wholly or in part, or under any special circumstances, or in reference to any class of the community requiring relief, leaving a smaller or larger portion of the charge to be made good from the Province or Presidency at large, or from the resources of the Government of India? Could any plan be suggested under which, subject to similar limitations, a municipality might be required to bear the cost of feeding its own poor? What kind of special local taxation should be adopted for this purpose? What would be the probable effect (1) on the minds of the people, (2) on the temper of the officials, of the knowledge that the cost of famine relief expended on their behalf or by them would have to be recouped by local taxation? Is there any reason to suppose that the sense of local responsibility, if it could be brought to bear, would not operate beneficially in the case of relief of the distressed portion of the population in India?

Sir W. Robinson.

I do not myself appreciate the principle of a mutual assurance fund as applied to the financial exigencies of a tropical famine; the principle of a local poor rate seems to me more in keeping with precedent and circumstances. The moral obligation that a population must not be permitted to let its poor starve to death under any circumstances holds good in India as it does elsewhere. It is of course more difficult of administration here from the spasmodic and large proportions of the occasional demand for Poor Law aid; but it is not on the whole an impossible matter to meet it with some moderate success; either as respects the administration of relief or adjustment of the consequent poor rate burden. This is, as it appears to me, a matter of distribution. The poor in India get on fairly well under ordinary circumstances without taxational aid, and we do not need a regular poor rate as yet. But a famine comes and the accumulated obligation appears at once in a very aggravated form, and the additional burdens cannot be borne by the people while the calamity is running its course. The question seems to me to be:—How best to arrange for the recovery of the necessary expenditure. The collection of a practical poor rate by taxation in advance does not commend itself to my judgment; and always must I think be (as in the case of the license-tax) received with feelings of distrust by the people. I confess that I cannot devise a more practical solution of the financial matter than to advise that the Fisc advance the needful poor rate from the public purse as a local loan to be recouped with interest as the country recovers after the disaster has passed. I have stated my views on this point somewhat more fully in my answer to Mr. Ballard's questions. The mutual poor rate should be Provincial, and of course the necessity of repayment would have the usual effect on the minds of the people and of the Executive—and what is equally important; I think that there would be less anxiety on the part of the Fisc than has ruled of late. Do what we may famine-rescue must be costly and long protracted.

Mr. Stokes.

A very large proportion of the acute sufferers from famine in this district were non-workers. I do not conceive that any scheme

Mr. Stokes—continued.

throwing the local responsibility of insuring their lives on those that work will ever be recognized by the people as just. To tax classes already reduced to the verge of poverty by a famine in order to pay the expenses of relief will be to prolong the evils of want by delaying recovery. I do not understand the meaning of local responsibility for famine, as famine is a catastrophe arising from natural causes over which the sufferers have no control. To insure the poor against the results of famine will only encourage improvidence.

Mr. Grose.

I can suggest no means of recouping famine outlay by taxation in this district which would not ruin it.

Mr. Pennington.

I am inclined to think that the bulk of the famine expenditure in this district (if judicious) might always be recovered from local rates *in time*, excepting so far as it was applied to irrigation works which are Imperial, and on which there is scope of for an infinitely more liberal expenditure than they usually receive.

The case of municipalities is more difficult; but they have, as a matter of fact, done more (by private charity and otherwise) than support their own poor; and the only plan for providing for the swarms of sick and famine-stricken people who crowd into the towns at the advent of famine seems to be to let the municipalities provide for them (as they come) at the hospitals and debit the charge to Provincial Funds as has been done during the present famine. I do not think it is desirable at present to introduce any special form of taxation for the support of the poor.

Mr. Sewell.

With all due deference to the Government of India it appears to me that the principle of enforcing local responsibility for famines would press very hardly on the people if carried into practice. The very locality that had been exhausted by a famine would have the period of exhaustion prolonged by extra taxation, possibly until the next famine occurred, and would never recover from the effects of it. I say extra taxation, because I cannot see how taxation in modification of, or in substitution of, that recently adopted, and not in addition to it, can possibly raise any additional funds to cover the cost of a famine. Municipalities as a rule can barely make both ends meet, and it would be very hard to throw on them the expense of an object which was never contemplated in the Municipal Act. Supposing a plan of the kind hinted at were introduced, I think the most probable result would be a larger increase of deaths from starvation.

Mr. Price.

The subject regarding which opinion is invited in this question is one upon which I do not think myself competent to speak. I have had no time to consider the matter. I feel, however, assured that carrying out the system indicated would lead to much murmuring, discontent, and ill-feeling.

Mr. Longley.

No. No part of the Presidency is capable of bearing the whole of the expenditure incurred in the relief of famine in that particular locality; and no taxation would bring the people to a sense of local responsibility in either of the directions indicated in the question. The present taxation (The Madras License Tax) falls on those who do not benefit by the organization of the State relief in times of distress;

Mr. Longley—continued.

for the tax is paid by traders while the bulk of the people seeking State relief consist of the majority of landholders (small in Salem) and laborers, and this I do not approve. Landholders in this Presidency are as much responsible for expenditure incurred on their account as in any other part of the empire, and as the ryots in the North-West Provinces have been taxed for the purpose, the ryots of this Presidency should equally contribute to what should form a relief fund in time of distress. I am aware that the ryots of the Madras and Bombay Presidencies were exempted from further taxation for the special reason that they have suffered from the effects of famine, and that it would be hard to burden them, irrespective of the recent famine, with *fresh taxes*. My proposal is to divert by legislative action part of the proceeds of the village service cess at present levied in the district to famine purposes.

Act IV of 1864 imposes a cess not exceeding an anna in a rupee on the assessment of lands held by Government ryots for payment of salaries of village establishment. The maximum rate of the cess is being levied (temporarily suspended) in this district. The proceeds of the cess amount to Rupees 1,68,000.

The village establishments which were formerly maintained exclusively from the percentage beriz deductions, which percentage is still continued, irrespective of the cess collections, have lately been revised and the number of Village Munsifs increased to such an extent that the smallest hamlet of only a few houses has now a separate Munsif, where before the hamlet was probably clubbed with the parent village. Nearly the whole of the proceeds of the cess has been appropriated to the payment of the new establishments in addition to the usual contribution.

I would propose a reduction in the cost of the village establishment sufficient to give six pies in the anna now levied for village cess to the famine fund; the efficiency of the establishment will not be impaired in any appreciable degree, and by this means a local poor fund would be established and the people of a district would support the distressed poor who are now inadequately supported for a time only where distress presses by promiscuous charity. The proceeds of such a tax in this district alone would be about a lakh a year. I deprecate most strongly any fresh taxation which would have a most injurious effect on the minds of the people who, I consider, are already sufficiently taxed with—

- (i) Land-cess and its accompanying cesses ;
- (ii) The increased duty on salt ;
- (iii) Municipal Tax, and
- (iv) License Tax.

I cannot say what the effect would be on the temper of the official mind, but as a payer of a fresh impost the official would in common with his non-official brother resent the imposition.

Mr. Horsfall.

The idea of local taxation to meet expenditure in times of famine does not seem at all advisable. Taxation should be general throughout each Presidency for the whole Presidency. No doubt taxation might be limited to each district, but the reasons against so limiting it are many and obvious. So also the expenditure in any division might be recouped by taxation from that division either in whole or in part, but this would be still more objectionable than limiting taxation even to a district. The resources of municipalities in this district would be totally insufficient to meet the strain thrown upon them by the necessity of providing for their poor in times of famine.

Mr. Horsfall—continued.

Moreover it is to the large towns or municipalities that the starving people invariably flock in such times. If it is determined that municipalities should provide funds to meet such expenditure, a fixed proportion of the revenue derived from the Professional tax should be set aside for the purpose. The imposition of a local tax would be very distasteful to the people of that locality. They would feel that having suffered already from causes entirely beyond their control, they were made to suffer twice over in being taxed. They could not but feel that the less Government had done for them the more they were called upon to pay. That their fortunate neighbours in the delta taluks, who had been provided with irrigation under the anicut would escape altogether; whereas they in the upland and poorer taluks, for whom no big irrigation works had been created by Government, would have to bear both the evil and the cost of meeting it. So strong would this impression be that many would emigrate to more favored localities. Officials would be deterred in a great measure from inaugurating works of any magnitude and would probably be too chary of expenditure.

It may not be out of place to observe here that but for the immigration of paupers from other districts, there would have probably been no necessity for extensive relief works in this district during the recent period of distress, and that the Bapatla Taluk where the chief and almost sole expenditure for famine works was incurred was to a great extent free from distress. Instead of direct taxation, which is always unfavorably received I would impose indirect taxation, such as a tobacco monopoly and gun tax. These would meet with no opposition, would not press hardly upon any class of people, and would, I think, suffice to meet the cost of periodical famines.

Mr. Melville.

Whatever may be the effect of recovering from a Presidency by special taxation State funds that have been expended on the relief of famine the attempt to apply the same principle to smaller areas, viz., districts or portions of districts must, in my opinion, be attended with great injustice. For instance take Tanjore and the adjoining district of Madura, or the Godavari and adjoining district of Vizagapatam. Tanjore and the Godavari Districts are exceptionally favored by nature in means of irrigation. These natural resources have been largely extended and developed by liberal expenditure from State funds. To these natural advantages, improved as they have been by expenditure from Imperial Funds, these districts owe their almost entire immunity from famine. The districts that adjoin them, Madura in the former and Vizagapatam in the latter instance, are much less favored by nature, and the expenditure in them of Imperial funds has been very much less. Both districts are liable to suffer from famine. Nothing to my mind could be more unfair than to tax specially the less favored districts to recoup expenditure incurred in famine relief while the neighbouring districts which escape famine owing to expenditure from the same source are left untaxed. The attempt to apply the principle to portions of districts would be even more glaringly unjust. As to the effect on the minds of officials and people, I am of opinion that such a course would be productive of universal and justifiable discontent. The impolicy of Government stepping in not to alleviate but to perpetuate and intensify the unavoidable disadvantages under which the less favored districts already labored could not fail to strike every one.

Mr Atkinson.

Copies of two letters from a late Collector and a late Sub-Collector of Cuddapah giving their opinion on the subject of local taxation for

Mr. Atkinson—continued.

meeting local famines are enclosed. These letters relate to a similar question that was asked in 1870. The people are not able to bear any further taxation, and from the best consideration that I have been able to give to the matter I am of opinion that a poor law in this country is not applicable.

(By Mr. VansAgnew, late Collector of Cuddapah.)

Adverting to the Proceedings of the Board, dated 18th July last, No. 4921, I have the honor to subjoin a report on the subject by Mr. Storr, the Acting Sub-Collector. The only other Divisional Officer who has favored me with his opinion briefly states that "there are no persons in his division from whom to levy contribution to the fund," and, in truth, there is little more to be said of the whole district.

2. There are no zemindaries, and very few ryots with large holdings. The lands are most capriciously assessed, and, looking to the natural deficiency of water, and the precariousness of seasons, and to the rates obtaining in other districts, and especially in those which, with greater natural advantages, have been recently scientifically resettled, I am of opinion, as to which the Board are already aware, that the present rates of assessment in Cuddapah are, on the whole, unfairly high.

3. I therefore hold that the great bulk of the land-owners are absolutely unable to bear extra taxation in times of famine, and I would here remark, what seems to be so constantly lost sight of, that all distinctions between Imperial and local taxation are wholly beyond the comprehension of the agricultural populations. What they have to pay they pay to "the Circar," and their minds are impenetrable by any other idea upon the subject.

4. It is impossible to arrive at any conclusive opinion on the subject of the hoarding of grain and money, but my impression has always been that the existence of the practice has been much exaggerated. I know this that I cannot get the reputed wealthiest merchants in the district to admit the possession of incomes of more than a very few thousands of rupees. Almost the leading merchant of Cuddapah has returned his income at Rupees 1,600, and the very highest return received is only Rupees 6,500. I have been making special inquiries, and although it seems very odd to me, and I am inclined to be sceptical about it. I cannot discover that more than about a dozen men in the whole district are even supposed to have incomes of Rupees 10,000.

5. The idea, therefore, of meeting a local famine by local taxation must be pronounced, as far as Cuddapah is concerned, to be an impracticable one.

(By Mr. E. Storr, late Sub-Collector of Cuddapah.)

I have the honor to reply to your foot-note, No. 265, of the 1st August 1870, on Board's Proceedings, No. 4921, of the 18th July 1870.

2. I beg to state that I differ entirely from the opinions advanced by the Famine Commissioners as to the arrangements to be made on the occasion of a famine occurring in any district.

3. The principle advocated by them appears to be that when the inhabitants of a certain district or portion of a district have, through no fault of their own, but through the visitation of Providence, been brought into great distress further burdens should be at once put upon them by the State.

4. The reason given is that, if the distress is relieved from funds contributed by tax-payers in general, and not by a local tax, there is danger of the dispensers of the relief acting overliberally because they only supply a portion of the funds from their own purse.

5. It is admitted that it is a fairer arrangement in the abstract that the empire in general should bear the burden of relieving famine occurring in its various districts, and surely it would be possible for the local administration to determine when the time had come for giving relief and to devise checks against abuse in granting it.

6. Famine occurring in a district affects all classes more or less, primarily the poor of the non-agricultural classes, and I cannot see the justice of throwing upon their richer neighbours the burden of their support. I am quite sure that the imposition of a local cess for relief purposes would at once stop most, if not all, the charities so freely given by native communities at such seasons.

7. To expect zemindars to support all the poor of their estates in a time when their own resources must necessarily be terribly diminished appears unreasonable. Their wealth is derived entirely from a share in the produce of the soil, and to impose extra taxes upon them at a time when they are getting no returns whatever from their estates, is a measure, in my opinion, both impolitic and unjust.

8. It is by no means clear to me that this obligation of supporting the poor (which admittedly attached to Government while it was the great landholder of the country) was transferred to the zemindars. In any case it has been held in abeyance for more than half a century, and I think the zemindars might with justice urge that such extraordinary taxation should be met not out of their own income derived from the land, but from other sources, such as Abkari, Stamp, &c., in which they have no share.

9. As regards the Sub-division of Cuddapah, I have no hesitation in saying that in time of famine it would be impossible to relieve the distress by a local rate. The population consists principally of petty landholders farming their own land, and moderately wealthy farmers are very few in number. There are no manufactures and few rich merchants who would be able to bear the extra tax. It would be an impossibility to tax the ryots who would already have been reduced to borrowing or mortgaging their lands to the Comaties.

Rev. Chester.

“Could any plan be suggested under which, subject to similar limitations, a municipality might be required to bear the cost of feeding its own poor?” The Dindigul Municipality contains amongst its residents very few rich traders or cultivators, and there are no manufactories where the employés are sure of regular and lucrative employment. As far as I could judge the distress during the famine among the majority of the people residing within the Municipal limits was as great as among the village people. From the instalment of the Mansion House money received by the Local Famine Committee at Dindigul for a period of ten months, assistance amounting to an average of Rupees 650 a month was distributed in the town. I mention this to show the status of the majority of the residents. And I presume that among the municipalities of the Madras Presidency others would be found where the residents as a class were not wealthy. This goes to show that one plan for collecting funds by which to bear the cost of feeding its own poor would not suit every municipality. I feel convinced, however, from what I noticed during the late famine, and during two other periods within the sixteen years of my residence in Dindigul when there was a degree of distress

Chapter I.—Question 26.

[35]

Rev. Chester—continued.

among certain classes of the people, from the high price of rice, that dependence cannot be placed upon private charity, to be raised by the natives themselves, if the distress is either very great, or extending over a period of some months, so that a considerable sum of money would be needed.

A plan I would suggest for the Dindigul Municipality, the only one in the Presidency of which I have any accurate information, would be to slightly increase the present tax on houses and lands within the municipality, say one quarter or even one-eighth per cent., and let this be invested each six months so as to draw interest and be allowed to accumulate until the recurrence of another famine required its use.

CHAPTER II.

RELIEF DURING EARLIEST STAGES OF DISTRESS.

QUESTION 1.—How does distress consequent on drought first make itself felt among the people, and how is it first brought to the notice of the district officers? What are the indications by which the district officer would judge whether the distress is due to temporary or local scarcity, or is likely to be the forerunner of very severe general distress ending in famine? What steps should be taken to ensure that such indications are brought to his notice? To what extent does the existing district organisation suffice to ensure early and trustworthy reports, and if not sufficient, what other measures are suggested as requisite?

Sir W. Robinson.

It would be impossible to devise more certain means of knowing the precise condition of the crops and of the people in every village, than we possess in South India. The question is simply one of sincerity and capability of administration with reference to the facts which can be made patent. We have in every village a village establishment; and we get from every village periodical statements of crops, &c., with reference to the Revenue administration. No plea of want of prescience can therefore exist—our difficulty is with incredulity or otherwise of the bureau (District and Superior) from whatever motive; and when there is the fear of being charged with “crying wolf” being deemed “sensational” and the like; and there is anxiety about securing superior belief and support, the difficulty of local officers is doubtless considerable, but it lies in these things alone. It is very sad now to contemplate what occurred in the early stages of our famine in North Arcot and Salem, and even in Coimbatore, from the fancy of single District Officers “not to have a famine” when it was raging around them. The famine was in full flood while we were being assured that things were fairly serene.

Wandering is always the first sign of pressure of want in the homes of the poor and it at once indicates deficiency of attention and relief where both are most urgently needed:—namely, in the villages. Indeed the goodness or otherwise of district administration may be fairly gauged thereby throughout a famine. Want has begun in the cottages of the poor, and they wander forth and are encouraged to do so from obvious reasons. I believe that the very keystone of famine administration lies in at once arresting this necessity in the villages, where alone estimates can be made. The organisation needful for effecting this end must be pre-arranged, and I trust will secure the Commission’s attention. As respects general estimates under such circumstances (Question 5), I may observe that a wealthy, well-to-do village with a quarter crop may pull through the early months of a famine very fairly, while a pariah hamlet—with dry crops only and those of the poorest kind and no money—may be decimated in a few weeks with half crops. Famine administration is almost an individual thing.

Mr. Price:

In an increase in the price of food, and consequent falling off in the quantity procurable. How distress is first brought to the notice of the district officer I am unable to state, as I was not one and was not doing duty in the Revenue Department when the famine began. I believe that it was brought to notice by Tahsildars and other Revenue Officers who attended, as they should, to their duties. There is, as far as I know, no special arrangement for reporting to the chief Revenue Officer of the district the appearance of famine. If he looks at the returns, and moves as he ought amongst the people under his charge, he will, if tolerably observant, notice distress quite soon enough to be able to efficiently meet it.

What I, as a district officer, would take as a sure indication of coming bad times would be a very considerable failure in the crops of the preceding year, followed by failure of the monsoons in the year under consideration. This, with increasing prices and increased demand for employment on the part of the laboring classes, ought to be a sufficient warning to prepare for the worst. The crowding of women and children to works, the sale of ornaments, the falling off in condition of the mass of the people, and the increase in crimes against property, come at a later stage; but they succeed with marvellous rapidity the period when, without the fear of being snubbed by his superiors, a district officer may definitely declare that famine exists in his charge. I do not think that there can be any difficulty, if a district officer is fairly on the look out and knows his district, in distinguishing temporary and local distress from what may eventually end in famine.

Local Distress.—I speak now of a district only—can be easily enough dealt with; so can temporary, where for instance there has been a very serious failure of the crops of one season, but it is clear that, unexpected and improbable circumstances excepted, the next will prove good and the period prior to the expected harvest has alone to be tidied over. The difficulty is to tell the exact period when temporary distress begins to pass into famine, and when the State should step in with relief measures of an extensive character.

I have no suggestions to make as to the course to ensure that indications of distress are brought to the notice of district officers. I consider, however, that districts and divisions, as a rule, are far too large. The staff of Native subordinates is also too small, and their charges are too extensive to allow of their being readily worked.

Mr. Longley.

Distress is first felt by insufficiency of food resulting from high prices, which is indicated by people supplementing the same with deleterious roots and fruits, which they would not eat as food in ordinary seasons.

The district officer would ascertain this from the monthly price returns received from the taluks and from special reports to be submitted to the Collector by the Tahsildars through the divisional officers.

Temporary distress is indicated by the rise of prices consequent on large exports to other districts, *e.g.*, the commencement of the Salem famine in September 1876 looked like temporary distress only. There were large exports to Bangalore, and, had the north-east monsoon in October 1876 not failed, it is probable that the distress would only have been temporary, as no further exportations would have been made and a local harvest would have been reaped. Local distress manifests itself by rise in prices caused by a failure of crops in a particular part of the country. The signs of a general severe distress are discovered from (1) the unfavorable prospects of a

Mr. Longley—continued.

coming harvest, (2) the state of the stock in hand, (3) the abnormal rise of prices consequent on the above two causes, and (4) the *intense anxiety* of the cultivating classes (small puttadars especially). These indications were all present in December 1876, when a *severe* distress was apprehended.

The submission weekly by Tahsildars to the Collector, through his divisional officer, of reports showing (1) the state of crops, (2) the prices of grains, and (3) the condition of the laboring classes and the frequent visits of the Collector and his divisional officers to the taluks to *test the accuracy of the information received* are sufficient. No other measures suggest themselves.

The existing organisation is quite sufficient for the purpose, and I have no other measures to propose.

Mr. Webster.

The existing district organisation suffices to ensure early and trustworthy reports of rain-fall, cultivation, health of people, and a tolerably fair report of the outturn of crops. But this information, as I have said above, is not sufficient to enable a fairly accurate forecast to be made. What is needed is an accurate return of the stocks of food-grains in the district at the commencement of each month. Such a return could not, however, be prepared without a large establishment and considerable inquisition. Estimates are made, but they are framed on no sure basis, and must, from the nature of the case, be a mere surmise. The quantity of rail-borne grain imported into, and exported from, the district can easily be obtained, but it would be necessary also to ascertain the imports and exports by land. This would be the greatest difficulty, and would require a considerable establishment. It would not be difficult to ascertain the actual outturn of the crops in a village, though the returns would most probably be under the mark as the ryots would think there was some new form of taxation in view. At present the Curnam prepares the return of outturn on a mere guess. He takes the number of acres cultivated under each crop in his village and calculates the amount of outturn at so much per acre. This will be far from correct, because the rate of yield per acre is arrived at on no fixed principle, and because the lands which, although cultivated, have no crop are not omitted from the calculation. I think that with our comparatively small villages and village establishments to which some addition would, if necessary, be made, and looking to the measurement of the produce as a recognised custom of the country as between landlord and tenant, there would be no difficulty in having all the crops in a village measured. It is doubtless an inquisitorial and therefore a somewhat retrograde measure; but I do not think we should compare India with other countries more fully developed, and some such arrangement must, I think, be made. The information thus collected would tell us approximately the monthly outturn of the district, and an estimate could be formed after a few years of the quantity of grain required for the consumption of the people for a year. We could then, on a failure of the cultivating rains, judge the then state of the stocks, how long they are likely to last, when and to what extent to be supplemented, and could forecast when they would be reduced so low as to materially raise the prices and thus cause distress, and when, if not supplemented, a famine of food.

Mr. Whiteside.

A rise in prices of grain, difficulty in procuring fodder for cattle and water for them to drink and for cultivation, are the first signs of drought. The rain returns and price lists, the season and cultivation

Mr. Whiteside—continued.

reports, sent in from the taluks periodically, are sure guides to the state of the country, and finally the claims for remission put forward at the time of jamabandi are a very clear indication of the condition of cultivation. A district officer can from these assure himself as to the prospects of the coming season, and can with confidence declare whether or not famine is to be expected. In North Arcot, months before famine relief-works had to be commenced, the steady progress of the district towards a state of famine was clearly discerned, and the works that should be taken in hand first were decided on with reference to a scheme drawn up by me in consultation with the District Engineer several years before. No district officer, who performs his duty with ordinary zeal and attention, can fail to notice the unmistakable signs of approaching famine. He must travel in his divisions and see and converse with his taluk officers and the more important native residents, and it is impossible for him not to become aware of what is likely to happen.

Mr. Crole.

Distress first makes itself felt among the people by absence of employment owing to agricultural operations being paralysed, and by a rise in prices. It is first brought to the notice of district officers by the usual reports from the taluks and by an increase in crime.

A district officer can distinguish between local or temporary scarcity and distress which is likely to be very severe and general by a survey of the previous and present state of the crops in his own and the surrounding districts, by inspection of the price lists returned to him periodically, and by a consideration of the reports received from time to time from his subordinates. The district organisation is sufficient for the supply of all necessary information.

Mr. Grose.

Distress appears first through outcries amongst the people, who are very noisy before there is real danger. Even when the distress is but slight there is a great deal of noise, and the pressure brought to bear on the lower officials is so great that they are sure to let the district officials know of it. Continuously rising prices and successive failures of monsoons over large areas increase local and temporary scarcity to severe general distress and famine. When there is danger the special attention of the lower officers in independent charge must be directed to the subject by making them submit special weekly reports to the Collector as well as the divisional officer to whom they are immediately subordinate. As each village has a corporation, consisting of a headman and others, with whom the Tahsildars, &c., are in frequent communication, early information is ensured. If the staff of Revenue Inspectors, which form the connecting link between the Tahsildars, &c., and the villages, were raised in status and increased in numbers, the organisation would be perfect; but it is greatly in need of this improvement.

Mr. Knox.

When there is only a rise of price consequent on a bad harvest in part of the district there need be no alarm, for if the rest of the district be well off, the distress will only be local and temporary. If, too, after the failure of a harvest, seasonable rain falls so as to render it likely that the next harvest will be a good one, the distress will not be of a very serious nature, prices will fall in anticipation, and the laboring classes will be able to get work in preparing the land.

The signs of famine are, serious failure of the crops all over the district, high prices every where steadily increasing, and continued drought. All these signs can without much difficulty be seen by a

Mr. Knox—continued.

careful scrutiny of the rain cultivation and price returns which are always available. Greater care perhaps would be needed to ensure accuracy in these returns ; but the present organisation of the district is quite sufficient if properly worked.

Mr. Pennington.

In this district, situated as it is on the sea coast, with a port (Tuticorin) always open and full of enterprise, with a line of railway running through it and several fairly good roads, to say nothing of 64,000 acres of the finest double crop rice-land in the Presidency all down the river valley, there was never at any time any absolute want of food, and the distress was indicated simply by the extreme pressure of high prices, as noticed under Question 15, Chapter I. Prices must always be the surest indication of the state of the country ; if rice is selling at *three-half pence a pound*, there is sure to be distress, and famine may be looked for as prices get beyond that figure. The tide of emigration should also be carefully observed as an indication of the pressure of high prices. It is quite possible, I think, to get all the required information from the existing organisation if properly worked.

Mr. J. G. Horsfall.

Distress first makes itself felt among the poorer classes by the diminution in demand for field-labor owing to the stoppage of agricultural operations, by their consequent inability to purchase their usual food-supplies while prices are doubled, trebled, and even quadrupled the prices in ordinary years. The district officer first of all receives, from his divisional and taluk officers, reports of an unfavorable season, of the withering and loss of crops, of the want of work for the laboring classes, of the failure of pasturage for cattle, and of drinking water for the people. He is inundated with petitions from the ryots praying for remission on account of the loss of crops. There is usually a sudden rise in prices followed by extensive increase in grave crimes, robberies, and dacoities, by panic in the bazaars, and by a marked increase in the number of persons soliciting alms. Ascertaining that high prices are caused by failure of crops, and not by exportation of produce to other districts where distress may previously have arisen, the district officer has then to learn the condition of surrounding districts and the state of the markets throughout the Presidency at least. Should reports from all quarters or from his neighbouring districts be no better than those of his own district, he may reasonably conclude that distress is likely to be general and to be followed by famine modified or intensified accordingly as immediately preceding harvests have or have not been plentiful. A district officer of any experience of his district may miscalculate the extent to which distress may reach, but can never be mistaken as to the sign proclaiming it coming. Famine follows a bad season, and should, with the exercise of ordinary caution and judgment, be foreseen six months beforehand.

The existing district organisation is sufficient to ensure the district officers being fully informed of indications of coming distress. Indeed, the danger is that they will be magnified and exaggerated, and to check this tendency it should be the district Officer's first duty to gather by personal inspection of his district the extent of failure. He should also call for weekly reports from each taluk as to the rain-fall, extent of cultivation, condition of crops, stocks of food-grain, prices, extent of demand for labor, movement of people, increase in crime, state of health, disposal of personal and real property including cattle and land, and the direction of trade whether export or import.

Mr. Goodrich.

In a district familiar to the officer in charge, the history of the period immediately prior to the rise in prices will indicate to him the probable intensity of the distress. Its existence he will discover by visiting the weekly markets in the interior.

Distress is not caused by the loss of one crop, but by the loss of several running; if one monsoon fail, this (Vizagapatam) district may yet obtain a good crop from the other as it receives rain from both monsoons.

The Collector can, and does, receive reports from taluk officers, but the stipends of these men (100 or more, often Rupees 70) are too small to secure good men.

Curnams in Zemindaris are removed by law from the Collector's control; if they were required to be qualified for their offices and to keep and furnish all accounts prescribed in ryotwari taluks, the Collector would possess widely-distributed sources of information; at present much must depend on his power of seeing for himself and, in a district like this, on his power of rapid and frequent travelling. This district is larger and much more populous than the kingdom of Greece or the kingdom of Denmark.

Mr. Lee-Warner.

The distress of the years 1875, 1876, 1877 will have been suffered in vain, if it has not supplied any rules, the intelligent comprehension of which will assist district officers in estimating the probabilities of distress following the failures of one or more seasons. The normal condition of vast masses of the people has been shown to be such that the third of a series of recurring bad seasons over a large area of this Presidency must produce famine, while the second of such a series may produce the same effect, but happily more often passes off after causing great local distress; and that the efforts of private charity are able to administer to the suffering consequent on the drought of a single season. The most unobservant of men will have noticed the melancholy incidents of village life which accompany distress at the stage, when the ordinary supplies of drinking water begin to fail in the villages. As a rule, the deep springs are not affected thoroughly by one bad season. The warning of a universal failure of the drinking water in the villages cannot therefore be neglected. Almost continuously with the drying up of the wells the village returns of mortality show increase; disease breaks out among the cattle and crime of all sorts, but especially cattle-lifting and grain thefts, is business of daily occurrence. The district officer, who has the opportunity of moving about, will observe the women and the children of the poorer ryots digging even late in the day in the hard soil for roots, of which decoctions are made, to eke out the scanty daily allowance of grain on which they begin to put themselves. Beggars and paupers will be met with in abundance. The bazaars in the villages, and especially the weekly markets, will exhibit an uneasy activity, and the usual ornaments on the persons of the women and children will be conspicuous only in their absence. These seem to be the indications on which, in the second year of continued drought, the district officer should insist that he is getting early practical reports. To ensure their trustworthiness it will be found better perhaps if at this stage he has not declared his own views. Rightly or wrongly the natives believe that their European superiors are intolerant of opinions which do not coincide with their own; and it is obvious what serious results follow from the adoption of measures taken on reports written to please. If precautions are taken to ensure a faithful exposition of the writer's own judgment upon the indications which he has

Mr. Lee-Warner—continued.

diligently observed; and if it be also allowed for that the proprietors of large estates habitually misrepresent the state of affairs within their estates in the early stages of distress, in which they are often supported by the resident Sub-Magistrates from apathy or ignorance or other motives, the existing district organisation seems to me to be sufficient for the purpose required of it; but as it has been shown that when there is a crisis the district officer's proper place is at head-quarters, whence he can issue instructions and answer pressing references without delay, I think that his hands should at this period be strengthened by the appointment of a famine officer, whose functions in the earliest stages of the distress would be in testing the trustworthiness of the information submitted to the district officer. Such an officer need not necessarily be recruited from the Civil Service; but it is indispensable that he should know the language well, and be thoroughly acquainted with the modes of native life and thought, and be, in fact, one on whose judgment the Collector need not be afraid to rely.

Mr. Martin.

A district officer who keeps his eyes on his price lists and on his rain-fall registers ought to have no difficulty in predicting the approach of distress of some sort. It is then his duty to send special orders to his Tahsildars, Deputy Tahsildars, Revenue Inspectors, and superior office establishment to go on tour in different parts of his range, while he should himself take such a tour without delay as will give him a pretty accurate idea of the state of production from the last harvest and the anticipations of the people themselves. The reports to be submitted by the subordinate officers should notice the estimated production both as arrived at by the officers themselves and by the accounts given by the village officers; they should state whether many or any of the people showed signs of suffering in their physique, whether they are living on unusual or unfit food, whether they have parted with their property to an unusual extent, and whether any of them who ordinarily do not emigrate have left their villages. If the failure of crops appears by general report to be very general and of a high per-centage coupled with high prices and a deficient or badly-distributed rain-fall, and above all if the wells are very low when they ought to be full or nearly so, then such indications of distress as I have noticed will probably mean twelve months' famine if it occurs in the Madura District at the close of the north-east monsoon, particularly if neighbouring districts are similarly affected. If such indications occur at the close of the south-west monsoon, the distress has a much shorter time to run until the arrival of the north-east monsoon rains, and in the first year of distress it will not be severe, because there will still be the grain grown in the previous north-east monsoon, constituting the great bulk of the food-supply, to prevent the markets running very short.

I would say that distress in the sub-division of Madura District will only become famine in the first year if the north-east monsoon fails, and will not necessarily exceed temporary scarcity, and that of a trivial kind, in the first year, if the south-west monsoon crops only fail. Whether a failure of the north-east monsoon will produce famine or only temporary scarcity in the first year can only be decided in each individual case, for previous prices must be taken as a criterion of whether previous harvests were short or not, and the state of neighbouring districts as likely or otherwise to create a demand for part of the district stock must be considered. A serious failure in the north-east monsoon may be, to a great extent, abated.

Mr. Martin—continued.

by the thunderstorms of April and May filling the wells and making a crop under them possible. If after a north-east monsoon failure, the south-west monsoon and the thunderstorms of April and May also fail as they did last year, there will almost certainly be famine, lasting at least until the next north-east monsoon harvest, for the wells, the wild vegetables and herbs and the well-crop will fail.

I consider that the existing district organisation here is sufficient to ensure early and trustworthy reports, if the ordinary office-work beyond what is absolutely necessary be postponed, and the divisional establishment be freely deputed on tour in different directions.

Mr. Austin.

The people first feel distress consequent on drought by (1) rise of prices, (2) want of fodder and water for their cattle, (3) difficulty in obtaining employment, agricultural operations being more or less in abeyance.

The price list and the rain report give the first indications of approaching scarcity to a district officer, then follow the cultivation and season reports. Lastly, at jamabundy the amount of remission which has to be given indicates to a certainty what the state of the past season has actually been. I do not think it possible to mistake the symptoms of approaching famine. The present famine was predicted far and wide long before scarcity culminated in actual starvation.

Mr. T. M. Horsfall.

The more general the distress, the more people emigrate from one district to another. Aimless wandering about is a very safe sign of severe distress in the Madura District. Large emigration takes place from the Coast ports to Ceylon and Burmah. I do not consider that it is necessary for the district officer to take any particular steps to ensure these signs being brought to his notice; they force themselves on him. The existing district organisation is more than sufficient for this purpose.

Mr. Soobien.

Distress consequent on drought makes itself felt among the people by scarcity of water in the vicinity, by the exhaustion of food-supply, by a refusal of loans from the neighbours, by abnormal prices of food-grains, by a lack of money and the consequent necessity of disposing of property at a cheap price; also by want of field and other work for the laboring classes and their consequent inability to procure food,—a difficulty which is greatly augmented by the dearth of the price of provisions. This state of things is usually brought to notice by general report to that effect and very prominently by emigration and by movements of persons in search of labor or food. Laborers thrown out of employ owing to stagnation of business in the labor-market begin to seek for places where there is, or where they think there will be a demand for their labor.

Mr. Vencatachellum Puntulu.

The taluks of my division (Harpanahalli, Havinhudgalli, and Hospet) are mostly dependent on the south-west monsoon. If there be no rain in any one year from May to the end of August, all hopes of first crop are given up, and the people feel that distress awaits them. As the Tahsildars register the rain-fall they judge from the blank returns they furnish, and the district officer also is guided by these returns.

The Tahsildars also send price list of grains sold in their taluks. As soon as the rains hold off, the prices of grain would rise and the

Mr. Vencatachellum Puntulu—continued.

lists would show it. This is another source of information to the district officer.

If the north-east monsoon sets in properly, the distress is temporary. If it fails altogether, it will be a severe and more general distress. If the south-west monsoon of the second year fails, famine is inevitable. The existing district organisation is sufficient to ensure early and trustworthy reports.

Mr. Seetharamiah.

Distress consequent on drought first makes itself felt by the people by the failure of crops, by the rise in the prices of food-grains, and by local scarcity of food-grains. The poorer classes of people begin to make use of prickly-pear and seeds of grass and of trees for their subsistence, and wanderers and beggars begin to increase in numbers. This state of things is first brought to the notice of district officers by the Tahsildars in their monthly season reports. In a district like Coimbatore, where the agricultural classes form the bulk of the population, the district officer would judge the state of distress from the following statements :—

1. Periodical statement of rain-fall,
2. Do. do. of cultivation.
3. Season report including harvest.
4. Return of prices of food-grains.
5. Mortuary Registers.
6. Police reports of lawlessness and crimes.

also from the general increase in the number of wanderers and beggars, as well as from the emaciated condition of the agricultural cattle for want of fodder, and from the inability of the ryots to pay their dues of Government revenue ; all these points being specially reported upon by the Tahsildars to the district officer. A comparison of the above statements and facts with those of previous good years would enable the district officer to form an idea of the state of the season in question ; and if the statements and reports of all or most of the taluks compare very unfavorably, if the rise in the price of food-grains be gradual and steady, if the increase of wanderers and beggars is unusually great, if the previous year was also bad, and if the prospects of the season in the adjoining districts as published in their District Gazettes also look unfavorable, it can then be said for certain that a general distress ending in famine would be the inevitable consequence. But if these indications were confined to a limited portion of a district, the distress must be considered only local and temporary. All the informations required for the district officer to judge on these points are periodically sent to him by Tahsildars, and this system of communicating information would be enough for the purpose, and so no other measures seem to be necessary.

Mr. Weekes.

Beggars increase in number. Laborers are unable to find employment and resort to jungle plants and berries for food. Weavers cannot find a market for their products. Crime increases, especially grain robberies. The poorer class fall out of condition. Later on wanderers are found dead by the roadside.

The distress is first brought to the notice of the district officer by personal observation, or reports of police officers or outsiders, *e.g.*, pleaders and mukhtars, planters and merchants or Zemindars.

In the beginning of October 1865, I saw the rice-crops in the district of Maubhum, Chota Nagpur, dried up in the fields, and in the same month, while in charge as Assistant Commissioner of the current duties of the Deputy Commissioner's Office, received a

Mr. Weekes—continued.

* petition from the pleaders of my court requesting that the export of the little rice left in the country might be prohibited.

I forwarded this to the Commissioner and received through him a letter from the Board of Revenue relying on the doctrines of free trade.

I knew that rice-dealers, notably a retired Deputy Collector and a Putni Talukdar, were speculating in rice and buying up and forwarding to Calcutta all that they could lay their hands on.

These, I consider, two early indications of the famine that began and made itself felt some five or six months afterwards, and which depopulated whole villages in the district. Nine months afterwards in the rains following, Government had the greatest difficulty in throwing a small amount of rice into the district, the roads being bad and unbridged and crossed by hill torrents; and it was then too late to save many thousands.

The rice imported was sold at 4 seers of 80 tolas per rupee. There was no other food in the district.

The district officer would perhaps be able to determine the local and temporary or more serious and general nature of the distress by his knowledge of the general or partial failure of the crops, taken with the outturn of the preceding harvests, and the prices ruling and the movements of grain. A total failure of the main harvest following two years of exceptionably bad harvest would be certain to induce famine.

Reports on the state of the crops, prices and rain-fall, and the state of people generally should be furnished weekly to the Collector by Revenue Officer where possible and also by the Police; but the Collector should also see things for himself and take a personal interest in the success or otherwise of the agricultural operations forming the sole and all-important business of the mass of the population.

In Bengal the information machinery is rather defective, but has been improved lately.

In Madras it is potentially all that could be wished.

Mr. Oldham.

The district officer will notice the price lists to be submitted by the police station officers or Tahsildars. He will hear, or if there be reason to do so, will inquire if persons of the lower classes who live by daily labor are travelling in search of work in any unusual numbers. The existing district organisation in the Madras Presidency and in Lower Bengal is sufficient to ensure early and trustworthy reports on these subjects.

Mr. Cook.

Distress consequent on drought makes itself felt among the people—

- (1) by scarcity of works for the cooly-classes.
- (2) by the increased price of grain in the local markets.

Distress is brought to the notice of the district officer by the following:—

- (1st.) Increase of petty theft of food and cattle.
- (2nd.) Wandering on the part of inhabitants.
- (3rd.) Increase of the begging population.
- (4th.) By field-laborers seeking work elsewhere.
- (5th.) By a rising tendency of price of grain in the local markets, &c.

Mr. Cook—continued.

A district officer, I think, should be able pretty well to judge whether distress was likely to be temporary or of long duration by the following :—

If there have been hitherto good seasons, but followed by a failure of the usual rains, a temporary distress would probably be the result, for the people are so very dependent on seasonable showers for their crops. But a failure of the rains coming on previously, bad seasons with prices gradually rising would be a threatening of a famine, because the people's reserves of grain, &c., must have been greatly diminished by the bad seasons, so that a total failure of rain would leave them little or no hopes of retrieving them, and the high prices of grain would be out of the reach of many.

Careful watching on the part of the taluk officials, weekly reports and frequent visits to the threatened parts, would be enough to keep the district officer on his guard and enable him to judge pretty well whether distress was likely to be temporary or of long duration. If district officers be constantly on the move, the present organisation would, I think, suffice for early and trustworthy reports; but it is very essential that a district officer should move about when distress is imminent, for Tahsildars (owing to their multifarious duties) and others are either inclined to be apathetic, as they hate the trouble of famine duty and thus conceal real facts, or else they are over-frightened and exaggerate the true state of things.

Mr. Travers.

Distress consequent on drought first makes itself felt among the people by the rise in the prices of the staple food-grains, and is brought to the notice of district officers by the large proportion of the cooly-class flocking in from the district to the larger towns. The indications by which a district officer would judge as to temporary or local scarcity are, by the absence of export of grain and a greater increase in the imports; or when a famine is imminent, by the scarcity of rain-fall and consequent dryness of tanks, and the fact that imports have to come from a distance, and the prices of food-grains rising.

The Tahsildars should report weekly to the Collector (or Sub-Collector) any indications of a famine they may notice, such as large numbers of people leaving their native villages, the different prices of food-grains, stating the rise in prices, diminution of water-supply in wells, tanks, and river-channels, and the prevailing complaints of the smaller landholders and cooly-class; on the divisional district officer receiving such indications, he should himself make a tour through his district and judge for himself, or if unable, through pressure of work at head-quarters to do so, he should apply for and appoint a special officer for that purpose when available, deputing some one for this work who has had experience in previous famines.

Lieut.-Colonel Hasted.

Work rates remaining the same while the price of food is increasing, ordinary labor, such as tank-diggers, as prices increase, forsakes the scattered works in the villages, and flocks to works in the neighbourhood of towns and large bazaars, and then migrates to more favored districts, where food is cheaper. Small cultivators, cultivators' servants, and low-caste people (Malas) who do not usually work under Department of Public Works, will then come on works, and later on ryots of a better class. If the scarcity is temporary or local, the tank-diggers will leave the distressed part, but the other classes will not; if famine is to be anticipated, all classes will begin to move to where food is more plentiful.

Hon. Gajapathe Row.

Distress consequent on drought is first felt among people by gradual diminution of drinkable water in wells, tanks, and small springs; failure of crops, consequent exhaustion of food-grains, having no sufficient quantity for consumption, high prices, and want of adequate pecuniary circumstances on the part of laboring classes to meet their requirements occasioned by scarcity, and increase of petty thefts and open disturbances at rice-market by cooly-classes and habitual mendicants. An instance of this kind occurred on — September 1877 at Vizagapatam. A number of distressed people committed a loot in the market and at rice-godowns, and the merchants were robbed of their large quantities of stored rice and paddy. The offenders were not detected. A similar disturbance occurred at Simhachelam, ten miles from Vizagapatam, at midnight of — September 1877, and in that case several persons were detected and convicted.

Unless the distress breaks into an actual famine, district officers have seldom accurate information of its predisposing symptoms, otherwise than by reports of every minute circumstance which might form one of the links of famine periodically laid before him in the form of returns.

The information must reach district officers under any circumstances through their local sub-divisional officers based upon the state of the country and state of the crops and market as well as the conditions of the people.

When the drought is continuous for three or four successive years, the crops must certainly fail. The stores of food-grains are entirely drained up. The minor farmers who cannot afford to pay the kists to their landlord leave their holdings waste. There is such a gradual rise of prices of food-grains that such classes become unable to provide for themselves and families and migrate from place to place in search of food, and resort to the chief towns of the district in crowds in hope of living on alms or of obtaining admission into poor-houses, if any, or of finding work for wages.

These form indications of apparent distress, and when these indications are of longer duration extending over the whole district, and its bordering provinces, it is manifest that the distress is not merely of a temporary or local nature, but is a forerunner of a very severe and general distress ending in famine.

To ensure that these indications are brought to their notice the district officers should obtain periodical returns from taluk officers of the state of the country, rains, cultivation, state of crops, and an approximate estimate of the outturn of the crops before they were reaped and of crimes and mortality with special remarks whether there are any other indications which foretell an approaching distress.

He must also have an ocular inspection of the state of the cultivated parts of the district in proper seasons to verify the reports he had received.

I do not believe that with the existing establishment the required information can be properly and accurately obtained. One or two clerks should be added to each taluk or divisional office for the purpose, and when the distress appears to have advanced so far as to indicate that famine is imminent, the district officer should be provided with a couple of Special Assistants to help him in testing the reports received from the local officers, and ascertaining their accuracy and credibility, and rendering necessary assistance in relieving the distressed.

Mr. Macartney.

The fact of drought rapidly enhances the price of food. There is a disposition on the part of traders to hold back from selling with the view of a further rise in the market-rates. The poorer ryots,

Mr. Macartney.

who live from hand to mouth, and are generally indebted to the sowcars, find it difficult to negotiate their customary small loans, which, in a promising year, would readily be given by the sowcars on the security of the coming crops. They have no considerable stores to fall back upon, as their surplus grain, after leaving them a bare subsistence, has been claimed and appropriated by their sowcars towards the liquidation of their debts. About this time they begin to part with any property that they may have in order to provide themselves with food. The extent of the drought, the state of the standing crops, the possibility of subsequent rain being able to save a portion, and what portion of such crops, and the tendency of the markets to rise should indicate to a considerable extent how far the scarcity may be feared to prevail.

An officer in charge of a district need simply ride out amongst the people of his charge, and, without asking any questions, he will soon hear enough of their complaints. These he may verify on the spot by carefully regarding the aspect of the people. The listless, hopeless looks of the groups of idlers at every village gate will tell its own tale. Tahsildars and Division Officers should be enjoined to report at once any indications of severe distress, and the district officer should, as early as possible, personally investigate.

QUESTION 2.—Which classes of the rural population are first affected by serious failure of crops likely to produce famine? In what way are they affected, and how is the effect manifested? Do the early applicants for relief consist of whole families or of isolated individuals? Are all sexes and ages equally represented, or do women and children preponderate among them? So far as the applicants are field laborers deprived of employment, does this arise because the employers have no money or grain to spend on wages, or because there is nothing to do in the fields?

Mr. Whiteside.

Petty landholders are the first to feel severely the effects of a general failure in crops. They do not usually work themselves, but superintend the cultivation of their little holdings by a few pariahs or people of other low caste, whom they employ on small monthly wages, usually paid in grain. When these people's crops fail, and there is a general rise in prices, they dismiss their workmen (who for some time will be able to find employment in other ways sufficient to support themselves) and reduce their expenditure to the lowest point. If the scarcity continues and their stocks of grain become exhausted, they then sell their cattle, reserving the ploughing bullocks as long as possible. Afterwards their little hoards of money are fallen back upon, and then the jewels of the family, after which the brass and bell-metal household utensils are sent to the pawnbroker, and finally lands and houses are mortgaged or sold. During the present famine, I noticed very many respectable landholders and village officers, who sent out the females of their own families as well as their other relations on to the relief-works at a comparatively early stage of the distress, and was informed on inquiry that there was actually no market for their property that they would otherwise have gladly sold. I was informed by a European resident of this district, who had a large herd of splendid cattle, that in the middle of 1877 he was glad to sell off his fine cows and young bulls at from Rupees 3 to Rupees 4 each, simply to save the expense of their keep. At that time cattle were unsaleable and, in many instances, were of an inferior description, driven to the jungle, and left to shift for themselves.

Mr. Whiteside—continued.

The laborers when dismissed by the small landholders can usually find work under the Department of Public Works on the roads, and also to a limited extent under the more wealthy ryots, who take the opportunity of cheap labor to sink new and improve old wells, or to level land for wet cultivation when times mend. Such people afterwards take to crime as a means of support, and they also eke out their daily food by collecting jungle leaves and berries, the heart of aloe plants, prickly-pear fruit, &c. Whole families do not at first appear in search of subsistence. The older members of a family begin to go out and beg. The adult males then wander away in search of employment, and it is not until the famine is thoroughly established that entire families will quit their homes and go to any distance. During the famine, the numbers of women and children largely preponderated often to such an extent as to cause much inconvenience. The men, in many cases, stand about the villages, looking after cattle, doing scanty jobs of work, and always on the look-out for any casual fall of rain that would enable them to begin to cultivate. Throughout the famine it was a notable fact that, after every good fall of rain, the numbers of adult males on the relief-works fell off at once, and the men hastened to their villages, to see what could be done in the fields.

Mr. Webster.

The agricultural laborers, petty artisans, weavers, and the smaller class of ryots.

The ryots are affected by the loss of their crops on which they depend for their support, and the balance of which is sold to pay the Government revenue; the petty artisans and weavers are affected by the slackness of trade owing to high prices and consequent necessity of the people to spend what they have in supporting life; and the agricultural laborers are affected (and sooner than the others) by want of demand for labor in the fields owing to there having been no cultivation operations (ploughing, sowing, and weeding), to there being no demand for harvest labor, and to the ryot's inability to pay for labor. The habitual beggars also are affected very early in the day by the cessation of charitable relief owing to the inability of the people to look after others than themselves.

The effect is manifested in the distressed people wandering, in the increase of beggars, and in the people eating the fruit of the prickly-pear plants and the seeds of grasses and trees, also by a general backwardness of collections and by the sale of jewelry, cattle, &c.

Females preponderated at the commencement and have continued to do so all through the famine. At the height of the famine, however, the number of children exceeded that of women.

Both because the employers have no money or grain to spend on wages, and because there is nothing to do in the fields.

Mr. Price.

The classes of the rural population first affected by famine are the ordinary cooly-laborers, especially those of the Pariah and Woddah (Navy) castes. These men are occasionally petty holders of land. The rain fails, they have had a bad crop the year before, they are "hand-to-mouth" people, and very soon get through what little grain they may have hoarded up in store, and dispose of such of their property as is saleable; they have nothing to do in their own fields, there is no ploughing or reaping work to speak of, and what there is, is done by the ryots and their own establishments. The next class to feel distress is that which supplies the ordinary wants of the cultivators, who very soon cut off any thing not absolutely necessary; the largest section of this, which is scattered

Mr. Price—continued.

over the country, is the weavers. Some of these combine agriculture with their usual avocation, and when not working in their fields weave cloths for hire, the employer finding materials. Distress very soon puts a stop to their professional employment, and they have to fall back upon labor. Others of the weavers, who are simply artisans, sell up all they possess. During the famine a very large proportion eventually found their way into poor-houses (relief-camps) and on to village-relief.

The petty farmers come next, and then the servants of the better-to-do ryots, who are obliged, as a rule, to economise and, as a first step towards this, to send adrift the laborers for whom they have no longer occupation. The way in which the classes alluded to above are affected by any serious failure of crops is in a curtailment of their food to such an extent as to produce a visible falling off in condition, which is first to be observed amongst the young children. Not only is the effect manifested in this patent way, but if relief is not given, offences against property increase. The early applicants for relief neither consist, as a rule, of whole families, nor of isolated individuals. My earliest experiences of relief measures were in connection with works alone, and I cannot recall a single instance out of many thousands in which a whole family came on the works. Isolated individuals were certainly numerous, but, generally speaking, there were two or three of a family. Some one was left behind to look after the house, &c., and others had, for a time, employment elsewhere, and it was not until the pressure of the famine increased very considerably and the people had deserted their homes in search of work, that whole families applied for relief. Women and children all through preponderated in poor-houses and on works and village-relief. The moment that rain came the bulk of the men who could work went away to the fields, leaving the women and children on relief-works in such disproportionate numbers that it was often difficult to find suitable employment for them. Adults, both male and female, from about eighteen to thirty, as a rule, form but a small proportion of the applicants for gratuitous relief. During the late famine they were to be chiefly found on works. As regards field laborers deprived of employment who come upon relief, the first and largest batch comes on to the hands of the State, because there is nothing to do in the fields; the second and smaller section is almost entirely made up of the farm-laborers usually employed all the year round by the ryots. These men are turned off by their masters because they can no longer afford to support them.

Mr. J. G. Horsfall.

Field-laborers who work for daily hire are the first to suffer from failure of crops. Agricultural operations cease with failure, and their ordinary means of livelihood is thus wanting. Failure of rain in the first instance prevents ploughing and sowing. The land remains waste. The ryot, the usual employer, has no need of his field-laborer, and if he has hitherto been paying him daily hire dispenses with his services without further ado. Such laborers usually live from hand to mouth, and are consequently compelled to wander elsewhere in search of labor. As distress increases, the ryot dispenses even with his permanent servant, the paleru, whom he finds himself unable to maintain. The desertion of home and village seldom takes place till all credit is exhausted and all saleable property disposed of. Meantime their scanty food is eked out with roots, leaves, and fruits that are never thought of in ordinary years. Resort is had to grain-pilfering, cattle-mischief, robbery, and dacoity, and the Crime Register shows generally a large increase in crime. The first applicants for relief are men wandering away in search of

Mr. J. G. Horsfall—continued.

work and leaving their families at home. Finding that work is not procurable, he returns to take his family with him in search of relief whether by work or charity.

Field-laborers consist of two classes—those who are hired by the day, and those who are hired by the year or more permanently still. The first class are turned adrift the moment the ryot no longer requires his services; the latter are retained until the ryot becomes apprehensive that his stock of grain will not suffice for the wants of his own family. This latter class is looked upon by the ryot almost as his own property, and is only discarded when the ryot is forced by his own necessity to do so, just as he parts with his cattle for a mere song, or even for nothing at all.

Mr. Grose.

The poorest classes of the population are, of course, the first affected by a scarcity. If a man has land, however little it may be, he can raise a loan on it and postpone the evil time for a few days. If he is a laborer, the richer villagers, beginning to retrench and refuse themselves luxuries, cease to employ him, and he has no property to pawn. Similarly beggars find that the power and inclination to give alms diminish. The first affected classes are the classes who are least tied to their homes, and they wander about in search of food. Isolated individuals first want relief, but as the famine advances whole families apply for it. In this district efforts were made to send all able-bodied labor to the canal, and women and children formed a disproportionately large portion of the residuum in some places; but I do not think there is any general preponderance of women and children. The usual employers do not cease to employ laborers at first, because they have no money or grain for wages, or because there is nothing for the laborers to do; but they discard some of their laborers, because they fear for the future; afterwards when drought has made cultivation impossible and the sum at the employer's disposal for paying wages has dwindled to nothing, all the laborers are, of course, dismissed, except that there are a few hereditary servants almost attached to the land who share the fortunes of the family so long as they have any thing to eat.

Mr. Longley.

Coolies by profession and ryots of small holdings who live from hand-to-mouth are first affected. They are affected by insufficient food and supplement this by deleterious food. After a time they part with their cattle and implements of husbandry; the effect of all this is manifested in great deterioration.

In the present famine isolated individuals were the earliest applicants for relief.

Women and children preponderate.

From both causes, but chiefly from the latter.

Mr. Pennington.

As far as my small experience goes, women and children preponderate largely amongst applicants for relief, and it was not an uncommon practice, I believe, in this district during the famine for the head of the family to emigrate, leaving his wife and children to be fed gratuitously till the advent of better times. This could only be avoided, I think, by providing labor at fair (not subsistence) rates so as to outbid the demand in Ceylon. The distress was caused chiefly by the want of labor in the fields, owing to the failure of the crops; but also no doubt, to some extent, by the inability of the ordinary employers of labor to pay wages for any work they might otherwise have found for their servants. It may be worth while to

Mr. Pennington—continued.

note here that the proximity of Tinnevely to Ceylon and the coffee estates of Travancore makes the circumstances of the district in the matter of famine relief (as in many other ways) somewhat peculiar ; and it is no doubt the case that different districts require very different treatment when afflicted by famine.

Mr. Sewell.

Large Ryots and Mirasidars, the ordinary employers of field labor, naturally contract their operations when expecting a famine, and of course the slack time of year for field work, viz., the hot season, is the time when laborers suffer most. In ordinary years the employers help the laborers through this slack time in order to retain their services for the coming working season. But, when Government relief is once started, employers, as a rule, stop all aid of this kind. They tell their laborers to go on to relief-works, knowing that, if they (the laborers) pull through the hard times, they will return to their own villages again and the employers will again get their services. Of course there are exceptions, but I believe this to be the rule.

Mr. Crole,

The rural classes first affected by serious failure of crops are the the day-laborers, farm-servants, and smaller ryots. They begin to wander or to live on roots, grass-seeds, and other natural produce. The first applicants for relief consist of isolated individuals ; at first men predominate. When they are field laborers, their distress arises, not from their master's not possessing grain, but owing to there being no employment in the fields.

Mr. Austin,

The first class of the rural population to feel the effects of scarcity are the small landholders. The cooly class find employment of various kinds for a time even after agricultural operations have come to a standstill, but the petty land-owner, who has hitherto always been supported by his land, is not accustomed to seek extraneous employment, and does not know where to look for it even if willing to undertake it. The effects of pressure are first shown by his selling off the cattle, which he can no longer afford to keep, then his wife's jewels go to the nearest pawn-broker, then his cooking utensils are parted with, and lastly he is reduced to selling the very roof of his house.

In many cases the small ryots took the thatch off their houses to feed their cattle, and finally ended by selling the cattle and the timber of their houses. In my experience the early applicants for relief are isolated individuals and chiefly women and children. Where the applicants are field laborers their distress arises both from their employers being in want of money and from there being no field work for them to do. In some cases an enterprising ryot with a little capital will avail himself of such an opportunity and improve his lands by digging wells or constructing channels, but as a rule their idea is to curtail expenditure by cutting down the number of their laborers.

Mr. Martin.

The belief I have on this subject is that the first to suffer are the small land-holders—men who in ordinary times till their own land along with their nearest relatives and eke out the remainder of the livelihood they require by odd jobs throughout the year. They get nothing from the land, their neighbours have no odd jobs to give them, and they have very few ornaments or other property to part

Mr. Martin—continued.

with. In this sub-division the men emigrated early, and the first emaciated objects I met with were women and children in groups, who threw themselves down and begged in concert for relief. They had been subsisting for some time past on roots and wild herbs, but the absence of rain for more than two months had made a scarcity of this food, and their prospect was terrible. My first relief works were immediately crowded with people of this sort, and very few men made their appearance. The field laborers did not make their appearance in numbers for some time afterwards, and then only by degrees.

At the first part of the famine they only came in those cases where their masters could no longer support them, and not simply because there was no work in the fields. Afterwards, even those masters who might have been able to afford it discovered that they could save the drain on themselves by sending their laborers to works, and they did so.

Mr. Lee Warner.

The villages support in ordinary times their own beggars; the proportion of which, excluding religious mendicants, may be 1 per cent. of the rural population. These are the first to feel the contraction of alms-giving, which a serious failure of crops produces; and the effect on them is manifested by their emaciation. They continue, however, to haunt the villages. The next sufferers are daily laborers or, as it may be more fitly expressed, ordinary coolies. In a time of wide universal distress these persons are to be found upon the main roads leading in the direction of large towns, marching along with their families, in which all ages and both sexes are represented. If (*vide* my answer to a portion of paragraph 6) the Public Works Department is then equal to the growing emergency, numbers of these persons will be provided with work before they have become lost in the streets and bye-lanes of large towns, or before they have wandered so long without food that they have become incapable of work. These classes always furnish the first applicants for relief at the hands of Government. When the richer ryots are compelled by their own necessities to send away their regular field laborers, the more advanced stages of distress, the forerunner of famine, have been reached; and then it is that the classes of "Soodras" who live by domestic service, handicraft's men, such as workers in carpentry or iron, weavers, and all those whose stock-in-trade is the knowledge they possess of some industry, but who never had any capital behind them, fall in overwhelming numbers upon Government relief. So far as field laborers, who in ordinary times are supported by, and have regular engagements under, the richer ryots, are ultimately driven to become applicants to Government for relief, much of this is attributable to the selfishness of their employers, who wilfully keep them back in the villages on half and quarter allowances of food, hoping against hope that the season will improve, before they are compelled to drive them out to seek elsewhere the means of sustaining themselves. The consequence is that when this point is reached these laborers and their families are weakened and only fit for gratuitous relief. I noticed this frequently in the Ramnad Estate; and the influence which the headmen possess no doubt has some connection with domestic slavery, modified with the progress of the country.

Mr. Knox.

The first class affected by failure of crop is no doubt the laboring population, not those who are permanently kept on by ryots and would come more under the head of domestic servants, but those who are only occasionally employed. Even if they can get work, they still

Mr. Knox—continued.

may suffer owing to high prices, but they principally suffer from there being little or no demand for labor. In proportion to the failure of the harvest and the continuance of the drought, so does the demand for labor become less and less, simply because there is nothing to be done in the fields.

Such being the case, even an importation of grain and a consequent fall of prices will do no good to the laboring classes, for they have no means of purchasing food no matter what its price may be.

This degree of distress, viz., the inability of the laboring classes to procure the means of purchasing food, will show itself in an increase of vagrancy and in an increase of crime, chiefly thefts of articles of food. These signs ought to be clearly discernible by District Officers already put on their guard by the previous failure of the harvest. They have ample machinery at their command to ensure full information being furnished.

When the laboring classes are thrown out of employ, whole families will be in danger of starvation and will suffer alike, and, if there be a little work obtainable, it will be monopolized chiefly by the stronger members, the weaker and more helpless suffering most.

Mr. Jones.

The poor farm laborers, either those employed for a period on the estates of more substantial farmers or those earning a daily living anywhere, are the first to feel the effects of the distress. They can get no work and have no food, and begin then to move about in search of employment and wages. This movement has a steady tendency in the direction of the Presidency Capital, where they hope to get work of some kind. At the very early stages of the distress only the men and boys and more able-bodied of the women went out far in search of employment, but, as the distress continued and increased, entire families joined them and took their chance of living by begging in the neighbourhood of the places in which individual members of their families were employed. When the distress was properly established, or, I should say, when the famine began, the applicants for relief consisted of whole families, the isolated applications being only at the very early stage. At the later batches seeking relief women and children preponderated. In the majority of cases it happens both that the employers have no money or grain to spend on wages of farm servants and that there is nothing to do in the fields.

Mr. Soobien.

In the case of laborers, absence of field and other work and consequently the absence of earnings to buy food, with no property to sell, follow as a result of a serious failure of crops. The failure of crops raises the price of food-grains and places the quantity requisite for his subsistence beyond the reach of the purchasing power of his wages which, owing to absence of work, a glut in the labor market, and want of employers, are materially diminished. Thus a failure of crops operates in two different ways on the laboring class. It diminishes their earnings and lessens their purchasing power. The effect is manifested in the reduction of the quantity of proper food, in the recourse to unwholesome food, and in the consequent gradual emaciation of the body. Want of work in the vicinity of their homes compels them to seek for labor elsewhere, and this leads to emigration. Movement of bodies of laborers from place to place is also an effect of the failure of crops. Further, when honest labor becomes scarce and is difficult to be had, other ways, no matter they are dishonest, for appeasing the cravings of hunger are thought of, and

Mr. Soobien—continued.

this leads to lawlessness and crime. As regards the begging class, who ordinarily lived on the bounty of their neighbours, they find it extremely difficult to live such a life in a year in which there has been a serious failure of crops, and their clamor for food therefore becomes very great.

When distress has began to be felt the members of a family begin to disperse in different directions, and it is only on rare occasions that the applicants for relief consist of whole families.

When things come to such a pass that through want of work in the neighbourhood the adult male members of the family quit their homes and emigrate to different places, then it is that the women and children left behind them preponderate among the applicants for relief.

Both causes, viz., want of work in the fields and want of means on the part of employers, contribute to deprive field laborers of employment, but the cause of the employers having no money or grain to spend on wages operates, I think, to a comparatively less extent. If the employers see that there is the slightest prospect of a favorable season, there is usually no lack of interest on their part in commencing agricultural operations. They raise money somehow or other and employ the laborers. Here I think it necessary to point out, however, that as far as this district is concerned, owing to the subdivision of lands being freely permitted, and owing to the small size of individual holdings, there is not much difference between a day-laborer and an employer, and employers therefore are not many in the district.

Vencatachellum Puntulu.

The laboring class and ryots who hold lands the assessment of which is less than 10 Rupees are first affected by serious failure of crops. The former wholly, and the latter to a great extent, depend upon their labor for their subsistence. The better classes who generally employ them become very economical on distress appearing, and perform all the work themselves, as they cannot afford to pay wages to laborers besides maintaining themselves and their relatives who do the needful work required in the fields. Hence there is no labor employed, and these suffer and clamor for want of work and food.

Seetharamiah.

Agricultural laborers and artisans are first affected, and next agriculturists of small holdings; the former by being deprived of field employment, which is the only means of their daily livelihood, and the latter by want of grain in store and by want of money to buy it from elsewhere. Both classes of people are therefore obliged to dispose of their household chattels and live-stock, and then leave their homes in search of work elsewhere, or assume the profession of beggars or commit petty thefts. If they cannot by these means successfully earn their livelihood, their physique is deteriorated, and gradually sickness prevails, and mortality increases. In the beginning of distress applicants for relief consist only of isolated individuals, and gradually of whole families when they find that they cannot live otherwise. Among the applicants for relief women and children generally preponderate, their proportion of the population being naturally greater. This being the early stage of famine, it is more on account of want of labor in the fields than want of money in the hands of employers that the laborers are deprived of employment.

Mr. Weekes.

The first to feel actual distress are the non-agricultural population. Of course the first to be affected directly by serious failure of the crops likely to produce famine are the cultivators themselves, and next indirectly through them and in a far higher degree the people who are supported by the crops, (1) the agricultural laboring class, (2) the artisans, (3) the beggar class.

Class 1 is not called in to reap the usual crop and misses its share.

Class 2 does not receive the cotton to clean (Dudekolas) or to spin and weave, or the oil-seeds to press. There is little sale for cloths, firewood, thatching, grass, in rice-husking or manure, removing or collecting to be done; stone and wood work for house repairing is postponed to a more convenient season: even shoes are at a discount though hides still command a sale for exportation in spite of the excessive deaths of cattle.

The third class naturally suffer as charity begins at home.

I think the early applicants for relief are the aged; and women and children preponderate.

Field laborers are deprived of employment in reaping because there are no crops and no harvest grain to be spent in wages and where there is no rain and it is not the season for agricultural operations, because there is nothing to be done in the fields and therefore there is no capital forthcoming. When the season is favorable for sowing, the circulating capital is forthcoming. Seed-grain is almost always to be found and purse-strings and grain-stores are opened; but at first grain-dealers hesitate; as the season advances and becomes favorable they are reassured. When success is assured the grain-dealers are as propitious as the circumstances. During the famine they withhold all assistance, and the cultivators in hard times try to carry in all their agricultural operations with the help of their own families.

Mr. Cook.

The classes of the rural population likely to be affected first by failure of crops are the cooly class, next the ryots. I should say about half of a village are coolies and laborers, the balance land-holders. If the rains fail, works in the fields must also come to a standstill; hence the laborers, who are mostly servants of the ryots, are thrown out of employ and first feel the distress. This is shown by their leaving their villages and seeking work elsewhere, which, if they cannot get, drives them to Government aid. As the famine rises, is at its height and on the decline, the ryots suffer, for at the beginning, being in possession of hoarded grain, cattle, jewels, household goods, &c., they managed by disposing of these to keep themselves alive, but when they have disposed of all these, they naturally find themselves in the same position as the other classes.

The early applicants for relief are generally isolated individuals; for instance, the husband of a family comes; as the husband finds his wage not sufficient to support his family, after a while, we find the wife following and so on. As famine gets worse and is at its height, it is a very common thing for the husband to desert his family for some other place where field labor is available, and this he generally does without telling his family where he has gone, for fear they should follow and burden him. Hence it is that on works we usually find a preponderance of women and children. The preponderance of women over men is also attributable to the fact that in every taluk the number of men to women averages less. At the beginning of famine, when field laborers are thrown out of employ, it is not, as a

Mr. Cook—continued.

rule, because the employers have no money or grain to pay them, but because there is no work for them to do. A ryot likes to keep his laborers if he possibly can, but he does not like to pay or feed them for nothing, especially when there is every appearance of prices rising. Hence, when work in the fields becomes scarce, the ryot gradually drops off his laborers till he has none left.

Major Baynes.

(a.) Those who live from hand to mouth, that is, those who are dependent on daily receipt of food or of wage for their daily expenditure, such as cowherds, hawkers of grass, of greens, of curds, and of fuel &c.; the first four, through failure of their stock in trade, are compelled at once to adopt some other means of earning a livelihood; the latter can only earn a bare subsistence under normal conditions; but, as soon as the price of grain permanently rises, that of fuel falls because the rich men will not pay even the usual price of it, so that in large country towns it was sometimes unprocurable, and these classes were driven, at a comparatively early stage of distress, to maintain themselves on grass seeds or by acceptance of State relief on works, in poor-houses, or in their villages.

Rural population—
which classes first affected.
Early applicants for relief—do they come in families or as isolated individuals.

(b.) Rarely in family groups; the larger number consisted of elderly women, chiefly widows, unmarried girls, and children of both sexes, who in one of the ways described above had been contributing to the family purse, and also of infirm paupers who had previously been maintained by their relations or by public charity.

(c.) Applicants and recipients of relief were of all ages, but the women and children greatly exceeded the males in number. I am unable to have recourse to returns, so speak from memory, but I think that I am accurate in stating the ratio of women to men on gratuitous relief was two to one, and of applicants for employment on relief works as eight to one. The preponderance of female applicants for work was so great that it was impossible to employ them all except at a dead loss to the work, and more specially to the male workers, because, when payments are made on tasks, directly a *superfluous* agency is employed, the receipt of each person engaged to perform that task is diminished. I have seen one hundred women and children clamorous for employment, but not a single man amongst them, and women would often work as men with mometies and pick-axes on women's wage sooner than be turned away. The number of children on works averaged, I think, about 25 per cent. of the adults, but on gratuitous relief and in kitchens they were nearly equal in number to the total of both sexes of adults.

This state of affairs to European experience seems strange, but is, I think, to be accounted for in several ways—

- (1.) That at all times women in this country perform more manual labor than the men as field laborers, weeding, planting, and picking crops, as carriers of burdens, as suppliers of grass, fuel, and water; whereas the men are too indolent and too conceited to work at any task which custom has specially allotted to the women, and, as these embrace nearly every ordinary avocation of life, the men have not much left to do.
- (2.) Fifty per cent. at least of the women under forty had been abandoned by their husbands or the men with whom they had cohabited prior to the distress.
- (3.) Every woman in this country is a mother who is capable of child-bearing.

Hon. Gajapathi Rau—continued.

he feels no sympathy either for the tenant who sold the grains to him by his contract, or his farm servants. Of course he never brings them to market for making a reasonable profit, but stores and waits until the prices have highly and highly risen in the market to treble their original price or more.

4. Thus the cultivator and the farm servants are deprived of the fruits of their labor, and the poorer laborers are unable to buy what they want for their daily subsistence, being penniless, and what they earn by daily labor being insufficient to cover the cost of their wants.

5. This is manifest by the fact that the lands which were under a minor tenant's cultivation were left waste by him, and he and his farm servants and laborers running from place to place in search of alms and charity while they work for hire where work can be had with their famished corporeal strength and skeleton-like appearance.

6. The applicants for relief consist of whole families as well as isolated individuals, but women and children preponderate of the distressed, although it is to be assumed that in a severe famine both sexes and all ages are equally affected.

7. We cannot arrive at a definite conclusion as to whether field laborers' calamity is due only to the means of the superior tenant's failure to keep up his establishment, or only to want of work in the field, but it must fairly be presumed that both these causes contribute to the distress of laboring classes.

Mr. Macartney.

Naturally a serious failure of crops affects first the poorest classes, ryots whose holdings are small, and such as live by their daily labor. Of the latter, those first affected are the women and half-grown children, who ordinarily add to the small earnings of the family by field labor, but which is now not procurable. Such as usually depend upon earning a livelihood by the sale of grass and firewood find now so much competition that their former occupation ceases to provide them with sufficient food. In such circumstances they begin to seek relief, appearing more frequently in groups of several at a time. The men at this early stage seldom appear. I am inclined to think that the want of field employment is due especially to the fact that there is no profitable work for them to do. When the crops give no promise of a fair return for the labor bestowed, it is evident that a mere minimum of labor will be spent upon them.

Lt.-Col. Hasted.

Among the rural population, the first to feel a failure of crops appear to be those who, in this district, are really the slaves of the ryots; these people are supported throughout the year by the ryots, but it seems that when the stock of grain is likely to run low, they are sent to find employment on Government works. As a rule, the men alone came to works first, and, till prices of food came to be very high, took money to their families at intervals; later on whole families came, and at the worst time women and children appeared alone, stating that the males of the family had deserted them.

Hurry Row.

The day coolies or agricultural laborers are first affected by failure of crops. Their services both in the field and in the village become unnecessary. They rove about stealing and begging. Early applicants for relief are generally isolated individuals and professional beggars. At the beginning males number the most. It is during the severest stage of famine that women and children seek relief, the professional beggars preceding the others. Farmers do not employ

Major Baynes—continued.

(d.) As far as *actual* laborers are concerned, because there is nothing for them to do in the fields, but in my taluk this class is few in number compared to the holders of small puttās, who under normal conditions would have worked on their plots if they had had grain in stock, and so these were thrown out of usual employ at a more advanced stage of the famine because they had neither bullocks nor seed nor means of subsistence till fresh crops were harvested.

Mr. Travers.

The class of rural population first affected through failure of crops is the cooly class through their inability to procure work in their own villages on account of the ryots not caring to sow their grain, fearing the failure of rain and the consequent want of water; under these circumstances, the cooly class begin to wander from their villages in search of employment, in most instances leaving their wives, children, and the relatives dependent on them behind; and these are the people who generally first require assistance, as the men coolies generally get into the large towns, and for a short time longer manage to support themselves, though not earning enough to feed their whole families.

The reason the applicants for field labor are deprived of employment is principally because there is no work to be done in the fields on account of the ryots not *caring* to sow, *not* because they have no money.

Rev. Newport.

The classes of the rural population first affected are the agricultural laborers and the ryots holding very small portions of land. In the one case the employers of labor are chary of making use of assistance in a time of scarcity, preferring to do more of the work themselves. The small ryots are scarcely removed from agricultural laborers in this respect and suffer very much in the same way as they. They depend for subsistence almost entirely on the produce of their own small holdings, and when this produce is insufficient to carry the ryot and his family through the greater part of the year, privation at once ensues as there is no stock of money or grain to meet the deficiency.

Next to these are the rural artisans, such as blacksmiths and carpenters, who depend for their livelihood mainly on the repairs and renewals of the agricultural implements used by the ryots and on the repairing and erection of sheds and other rural buildings. This work falls off at the first appearance of scarcity. Old implements are made to do longer service and dilapidated sheds are not renewed or repaired.

Hon. Gajapathi Rau.

Farm servants, laborers living on daily or monthly wages, and minor tenants cultivating small plots of land, say paying rents below 50 Rs., and men of precarious and unfixed means of livelihood, such as carpenters, smiths, and weavers, &c., are first affected.

2. With drought the prices of food-grains rise, and their limited means would not afford them ample means of purchasing the food-grains whose stock in the market is getting decreased.

3. When a sowcar foresees an approaching distress he avails of the first opportunity of advancing funds to the needy tenants who had fallen in arrears with their landlord, and contracts to buy at a very low rate the whole produce of his field. As soon as the crops are harvested he takes charge of the grains and stores them up. But

Hurry Row—continued.

laborers in bad seasons because they wish to keep what money they have against the coming scarcity or famine and because there is nothing to do in the fields.

QUESTION 3.—What classes of the urban population are the first to feel the effects of famine, and in what way do those effects operate on them, and how do they manifest themselves? How may they best be watched and met in their first stage?

Mr. Longley.

Of the urban population, the cooly artisans and other cooly classes (*e.g.*, the blacksmith dispensing with his cooly-bellows-blower on account of high prices) are the first to feel the effects of famine by loss of employment consequent on diminution of proper food.

By final deprivation of cereal food and resort to noxious herbs, &c., or alms to sustain life and a tendency to wander aimlessly away in search of livelihood, &c.

By local inquiries through Municipal and other local agency, thereby giving timely employment and thus preventing their tendency to wander.

Mr. Whiteside.

In the towns, the petty artisans, and more especially weavers, brass-workers, goldsmiths, washermen, and barbers are the first to suffer. Such people depend for their support in ordinary times upon the expenditure of the more wealthy in little luxuries which are the first things that are dropped when a famine makes its appearance. Very early in the famine, I noticed a number of barbers who formed a gang of coolies doing hard earthwork on a road in the Palmanair Taluk, and found on inquiry that they had no employment whatever in their ordinary calling, and thus had no option but to go on to the works to save themselves from starving. Hardly any weavers, however, went on to the relief works; they sold off their looms and other little properties; they begged and then starved; but they obstinately refused to do relief work, or to go to the camps, and I saw so clearly the terrible state of distress into which the whole weaving community had fallen, that on the 7th March 1877 I wrote strongly, recommending the grant of advances of Government money or yarn to enable them to continue their ordinary mode of life, and the

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Government were pleased to approve of my suggestion, and many hundreds of lives were saved. Such distress need not be watched for. It is patent to the most unobservant eye. Then, too, in large towns, there is usually a large number of Mussulmen residents who are always poor, who have little or no household property to fall upon, whose females are gosha, and the males too proud to work or beg. Such people I well knew suffered very soon, and very terribly as the famine went on, but the class is one that it is extremely difficult to deal with, or to understand its actual condition. Neither males nor females would accept work, and they scouted the idea of going to relief camps. Money they would accept, but in the great majority of cases refused to come and take it, demanding that it should be brought to their homes, and they were the more strict in this if (as was usually the case) some of the leading members of the Mussulman community were on the Distributing Committee.

Mr. Webster.

Artisans, weavers, daily laborers, and habitual beggars. Distress among such people is manifested by an increase of alms-begging and by their wandering about the streets.

Mr. Webster—continued.

The best way of meeting distress among the laboring classes and beggars in the first stage would be the establishment of relief-works in the town. This would provide for those able to work, but there should also be a close poor-house for the old and infirm and those unable to work. Works alone will not do, neither will a poor-house alone, both must be instituted simultaneously. The former alone will not provide for really deserving persons who cannot work, and the latter alone would result in keeping a number of lazy, idle, good-for-nothings in ease and comfort. I do not think any system of meeting distress among such people in any stage is as good as work and poor-house together. And when any relief at all is needed it should take this form. Distress among artisans and weavers, more especially the latter, as they form the more numerous class, will require different treatment as they are unaccustomed to earthwork. It would be necessary to provide employment for them by weaving. The artisans might be employed on odd jobs about the relief-works. This latter class is not numerous, and they might perhaps be made to work on the usual relief-works at first in the weak gangs.

Mr. J. G. Horsfall.

In the large towns the professional beggar-class first, then the classes who work for daily hire suffer; that is, the cooly class generally; then weavers, cloth-dyers, masons, carpenters, smiths, and other artisans. These latter obtain credit for a time by the disposal of their property. The result of want of employment generally is that the bazaars are crowded and complaints of combination, &c., made against the grain dealers with not unfrequently an attempt to help themselves by "looting" the grain warehouses. With high prices the employers of labor reduce as far as possible their expenses, thus fewer cloths and jewels are purchased. Houses are left unbuilt or unrepaired. On the other hand the laborers find that their daily earnings, which formerly sufficed to procure food for their families, are now no longer sufficient. For a long time insufficient food is endured, and then begging and resort to relief whenever offered.

In the early stages suitable works near their homes should be provided. It is the want of employment solely that aggravates the evil, and at first all are unwilling to wander far from their homes even with the assurance that employment will be provided for them at a distance.

Mr. Goodrich.

The poor Mahomedans in such towns as Vizagapatam, Vizianagram, and Berhampore are the most improvident class. Of this class but a very small population has any employment, and each earner of wages has an undue number of dependants. Their condition is degraded and they want will or skill to work; direct relief in food or money must be given to them. To the Hindu poor advances of yarn to weavers and earthwork upon works of water-supply or drainage will provide subsistence. Estimates for such works should be kept in Municipal offices; there is no town which does not need improvements of the kind.

Mr. Price.

First those persons who have fixed salaries and coolies, next the artisan class, and lastly the petty trader. The way in which distress operates upon the first and second classes is by an increase in prices directly diminishing the supply of food procurable by them; in the case of the third, by a marked falling off in the demand for everything, excepting the actual necessities of life and a consequent diminution in their receipts. How to watch and meet the effects of

Mr. Price—continued.

famine amongst an urban population is a matter upon which I can give no opinion. I had nothing to do with anything of the kind. I quitted Bellary before the subject of affording aught but relief by works was considered, and, in Cuddapah, town relief was, until a comparatively late period of the famine, afforded by private charity, assisted by a special grant from Government. In the case of Government servants, the obvious method of relief is an increase of salary (which can be easily calculated) as soon as the price of rice reaches a certain figure and has remained at that for a certain time.

Mr. Grose.

To the laborers and beggars, as the part of the population first affected by famine, must be added for towns where they are sometimes very numerous, the recipients of small ready-money pensions. The distress shows itself by outcries and disorders in the bazaar and not by wandering in this case. Relief works on subsistence wages should be provided near the town at an early stage.

Mr. Crole.

The urban population first affected belongs to the cooly class, who always live from hand to mouth. They congregate in the bazaars, rate the shop-keepers for the high prices prevailing, and sometimes threaten to loot them. They should be recruited for some large public work, at least ten miles distant from the town.

Mr. Sewell.

In towns the habitual beggars feel the effects of famine first and manifest it by their increase of numbers, poorer appearance, and greater importunity. They are a most difficult class to deal with, being vagabonds and objecting most strongly to anything like the restraint and cleanliness of a camp. Without force it is next to impossible to keep them within bounds. What they like is to get a daily dole or meal and then to wander about in hopes of picking up more. If it were possible at the commencement of a famine to seize and confine in a camp all the professional beggars, it would be comparatively easy to assist the more deserving class of petty shop-keepers, hucksters, &c., who are the next to suffer. If legislation is to be adopted to give officers greater power of control, I think the professional beggar class is the one to which it should be first applied.

Mr. C. J. Knox.

The smaller artisans in town must first suffer from the effects of high prices, viz., those classes whose customers are chiefly the poorer classes of the population; such for instance are the weavers of common and coarse cloths, potmakers, cheap bangle-makers, and probably also makers of agricultural implements. Such of these artisans who have but a small stock in trade and cannot make large profits must necessarily first feel the pinch as the demand for their goods is reduced to a minimum. If the distress continues and increases probably all trade but that in food suffers; but the more opulent tradesmen have something to fall back on; the smaller artisans little or nothing.

I see little good in making inquiry into the circumstances of these classes; they will suffer more or less according as there is general distress in the district; which general distress can be gauged in the manner I have before pointed out. Neither do I think it at all advisable to make special efforts to meet distress among these classes. When general relief measures are considered necessary all classes may take advantage of them. For instance, I doubt the advisability of

Mr. C. J. Knox—continued.

making advances to weavers of money and material for manufacturing cloths. The cloths will not be saleable at first, and when Government at the conclusion of the famine endeavours to sell them, they will, if successful, paralyse the trade of the very persons they have been trying to help.

Mr. Austin.

In the town of Vellore, the only large town of which I can speak, the first class of the population to feel the effects of the famine were the Mussulmans. The town was thronged by old and infirm Mussulmans of both sexes, but chiefly females whose ordinary protectors began to find themselves unable to support them at this crisis. It is wholly superfluous to watch for them. They make themselves seen and heard.

Mr. Martin.

The village beggars first, and next the smaller artisans and the weavers. These are persons generally who use grain largely in their diet, and seldom touch meat. They begin to wander about the country in small numbers as distress increases, and some of them take to crime. As distress heightens, great numbers of this latter class get involved, for the demand for their productions almost ceases, and they have no system of asking higher prices when food increases in value. They do not, either, as a rule, hoard grain or money.

The meat-eating classes get on better, partly because they have more stamina and partly because they steal freely from the flocks and herds in the neighbourhood.

Briefly, I think that there should be a preliminary inspection made very rapidly by a great number of responsible officers to warn people against emigrating to improper places, and to let them know that arrangements for their relief will be made if the season gets worse.

Inspection on a standard scale should be introduced in any tract in which this preliminary inspection shows distress likely to result in starvation, and at first it will probably be found possible to distribute the people into workers and persons for the poor-house, leaving the old, &c., to depend on relief by private charity. By degrees this private charity will be withdrawn, and people will begin to show one after another the necessity for the relief which the Inspector must have power to extend to them.

Mr. Soobien.

Day laborers and laborers working under professions such as artisans and weavers, &c., and others who are not habitually engaged in any profession such as Brahmins, Mussulmans, &c., are the first of the urban population to feel the effects of famine. The effects operate on them by absence of employment and by paucity of relatives and others willing and able to help them and are manifested by their general clamor for work, by their starvation, and by their being consequently compelled to live on unwholesome food.

Mr. Jones.

The small cultivators living on the produce of their own labors and above working for hire are the first to feel the effects of famine: their small stores are exhausted and their fields cannot be worked and are of no use to them: their credit is gone, and they begin to hoard the little they have by scanty expenditure: they put themselves on reduced quantities and try to hold out as long as they can. They gradually lose strength and condition, and, when

Mr. Jones—continued.

at last they have absolutely no food and no means of getting any, they wander away from home in various stages of emaciation, dropping down and dying as their strength gives in. These are the most silent and heroic sufferers; their traditions and their training keep them from asking till it is almost too late to do them any permanent good by affording them relief. Some employment near home for these classes will, I think, be the best way of meeting their distress in its early stage.

This is, to a certain extent, correct, but I think that Mr. Jones puts it rather too strongly. There are "yeomen," so to speak, who will not come to work until hardly pushed; but, as far as my experience goes (Bellary and Cuddapah), the generality do not wait until this stage of want.

Mr. Horsfall.

Among the *urban* population those who make luxuries are first affected. A good instance are the *weavers* in Madura. They are difficult to watch and judge as they are a retired and unassuming but useful caste. House-to-house visitation is necessary in their case to be of benefit to them.

Seetharamiah.

Of the urban population the class of men first affected by distress are weavers and artisans; the effects of famine operate on them just in the same way as they do on field-laborers, these being the indirect laborers of the agricultural class generally. The effects may be watched generally by careful inquiry and scrutiny by Government officials into their private circumstances, and can be met by giving them such employment as they are accustomed to do.

Mr. Oldham.

Of an urban population the first to feel the effects of famine are the day laborers, and the artisans of any large industry who work for daily wages, particularly if the industry be an overstocked one already. The weaving class is the best type, and I refer particularly to it. The effects operate by the sale of clothes becoming contracted, and by employers dispensing with their hands, or their demand for clothes. These people generally have some cohesion and represent their own distressed state to the authorities. After much experience of the class, both in the Midnapore District (Bengal) and in Adoni, and of many devices for relieving their distress, I have no better remedy to propose for the State than to provide for them out-door work on roads. Private charity can be dispensed to them in a different way. I would refer them to out-door work at the earliest, as well as the later stage, for State relief.

Mr. Weekes.

Artisans, especially weavers, *purdah-nashin* women and others with small fixed incomes, and the sellers of the thousand other articles, fruit, vegetable, &c., which form the main staple of the small shops in a town. Those with fixed incomes are affected mainly by the rise in prices; the artisans because the cultivators have not enough to feed themselves and cannot buy clothes, &c., the small shopkeepers from the absence of their usual articles of sale. Employment in spinning and weaving should be given to weavers and helpless women.

Mr. Travers.

Of the urban population, the first classes to feel the effects of a famine are the petty comaties and weavers, and in the early stages I think these should be helped with small advances; the weavers certainly might be helped through a famine by Government supplying material, and just paying sufficient for the working up of it as to keep the family; in the same way most of the "mechanic class" might be assisted, Government ultimately selling the products, and probably recovering the most of their outlay.

Mr. Cook.

In the town the first people to suffer are the beggars, I do not mean wandering mendicants, but village beggars, who have been in the habit of picking up a little here and there, and artisans. As regards the first, it is shown by their wandering propensities. A village beggar will never leave his village if he can help it, but as soon as distress comes, and he finds he cannot get anything at home, the beggar may be seen roaming everywhere, and as distress increases his physique gets weaker and weaker. Next are the artisans, such as weavers, smiths, carpenters, &c. As the famine increases they find their living going, for those who used to employ them are beginning to feel the pinch of famine also and require their services less and less. Hence they gradually dispose of their tools, &c., &c., try begging, and finally are compelled to seek Government aid. It is not until the famine is at its height that we find this class of ryots on the works, for never being accustomed to hard manual labor, they shrink from going. Perhaps the best way of watching them in the first stage is by putting them under the supervision of the Village Magistrate with orders to watch them carefully and report on their condition, and if possible to keep them together in their villages by private charity, which could be best organized by the Tahsildar, for when they begin to stray, it is difficult to aid them. At the beginning of famine the villagers will not allow them to starve, for there is a kind of freemasonry among natives. As famine increases and their condition gets precarious, steps should be at once taken to get them on some work or other, or support those unable to work with dole, but till that time I think they are safe enough in their own villages.

Major Baynes.

(a.) Weavers, artificers, potters, brick-makers. Weavers and artificers, when the famine becomes established, are unable to dispose of their handiwork; their distress is evidenced by the sale of ornaments, jewels, and brass household utensils; by the offer of their manufactures at nominal prices, and crucially by their application for employment on a relief-work, or by their willingness to accept cooked food in a poor-house.

(b.) To afford relief to these classes at the proper time and in a way acceptable to them is a very difficult task, but to do so in such a way as also to ensure perfect freedom from abuse is impossible. The offer of relief to them under the same conditions of labor and residence in a poor-house that were applied to the laboring and agricultural classes is practically to prohibit its acceptance by them; they are neither inured to labor under exposure to the sun, nor are they accustomed to the use of excavating tools. I have seen their women faint on the works and their men with hands so raw from the friction of the tolls that they were unable to use them; moreover these classes, and especially the female members, have a strong prejudice against the acceptance of cooked food and its consumption in public;

Major Baynes—continued.

so powerful is it that they will refuse relief in a poor-house though the result be death ; therefore to force members of these classes to earn their relief by digging or by residing in a poor-house is simply to cut off the large majority from State relief.

(c.) At a later stage of the distress the Government permitted advances of money to be made to weavers for the purchase of materials, which, when manufactured into cloths, were bought by Government at prices calculated to represent the wage of manufacture. This method was not, in my opinion, either advantageous to the State or effectual as a relief measure, because although the sum of money thus invested in advances without interest was enormous, the amount of relief afforded was not sufficient to the support of any other but the worker, so that the weavers' families had to be supported gratuitously and because the loss sustained on the sale of so large an accumulation of stock was, I believe, very great ; and if, to ease the sale of this stock, the retail price were reduced below the ordinary market value, the weavers would again be disadvantageously affected.

(d.) In cases of widespread public distress it may reasonably be demanded that persons who have private means should exhaust them before they claim gratuitous support at the public expense ; now all members of these classes, even the journeymen, possess jewels, &c., which represent so much tied-up money, and, as long as I knew that such a person had such means of self-relief, I should not consider him eligible for gratuitous relief.

(e.) The question here naturally suggests itself,—How can the true condition of a member of these classes be ascertained so as to equally guard against unjust refusal of relief by Government on the one hand and against an undue advantage being taken of the public charity by the applicants on the other ? The only tangible test that I can suggest which is sufficiently unpleasant to be restrictive, but not so much so as to be essentially prohibitive, is to offer cooked food without residence to such as solicit aid, but not in a *public* kitchen. I would set apart for them an enclosure in their own quarter of the town into which none but their own caste-fellows should have access.

(f.) Further, it must be remembered that all applicants for gratuitous relief, whose appearance does not indicate the necessity of immediate aid, are subjected to a careful inquiry before it is extended to them ; and, in dealing with comparatively so small a portion of the affected population as is comprised in these classes, it is quite possible for an active and intelligent officer to arrive at a close approximation to the condition of each applicant. On all large public charities there must be some abuse ; but from my own experience I believe it can be reduced to a minimum, which it is better should exist than that by the rigid enforcement of repugnant measures a large amount of needless suffering, if not of mortality, should be created amongst certain classes.

(g.) The brick-makers, potters, and builders of mudwalls are accustomed to work in the sun ; but they are not able to compete on earthworks with professional excavators like Weddahs. Relief, however, can be afforded to them on works by apportioning the task to their capabilities, or by feeding them in village kitchens.

Rev. Newport.

The classes of the urban population first affected are the small bazaarmen and those artisans accustomed to do the rougher and inferior work of their various trades. The small bazaarmen feel the privation, because, dealing in small quantities and with the poorest classes, they fail to sell a sufficient quantity at the enhanced rates

Rev. Newport—continued.

to gain a livelihood for themselves and family. Their transactions are fewer and on a smaller scale, and their profits are less than before. During the present famine hundreds of these petty tradesmen failed altogether to get a livelihood. They spent their daily receipts in meeting the wants of their households, and, when their stock of goods was gone, had no means of procuring more. They thus became beggars.

Among the working part of the urban population, the petty artisans (such as the sandal-makers among shoemakers, the journeymen amongst blacksmiths, weavers, goldsmiths, &c.,) are the first to feel the privations attendant on famine. The coarser or inferior workman finds his clients amongst the poorer classes, and hence suffers when they suffer, *i.e.*, at the very beginning of the famine. The journeyman-artisan is dismissed by his master as soon as the latter has only enough business for his own hands to do, and hence pinches a long time before his master does.

The lower classes of household and other servants on small fixed monthly salaries are also among the early ones to feel the pressure of the famine.

With respect to this last class, I see no means of caring for them except through their masters, who will doubtless do all they can to help them.

In the case of the other classes, the best way of assisting them appears to me to be the affording of help to the master-artisans. Employment in their own line is of course the best means of rendering aid, but difficult to carry out in the numerous trades. If the master-artisan had sufficient work to enable him to employ journeymen, he would of course give them employment, and these in their turn would patronize the petty bazaarmen, and thus the lower strata of the urban population would be benefited all round.

QUESTION 4.—There is a considerable number of poor and infirm persons, who in ordinary years are supported by their richer relations and friends or caste-fellows, and of habitual mendicants, but who become claimants of State relief when scarcity or famine arises. What is, approximately, the proportion of this class to the total population, and at what stage do the springs of private charity begin to dry up?

Sir W. R. Robinson.

I think that the Commission scarcely need hamper itself about sources of private charity in famine times. Private charity is fair in India in ordinary times. But in a famine the balance is necessarily on the other side—Charity is reserved for the family—and it therefore need scarcely enter into the calculations of the Commission. In its character too—distribution of small casual doles of conjee-water and the like—it does not save life though it may slightly prolong misery. As a matter of fact Government may put the consideration aside as unlikely to be efficacious in the task before them; and should deal with famine as if private charity did not exist—deal with it as a “poor-rates” question altogether beside casual, indiscriminate, and feckless charity. Of course friends and connections help each other most admirably in this country; but direct independent and individual charity is more or less a snare and delusion; and at such times unworthy of the reliance of Government.

Mr. Price.

I have no reliable data from which to calculate. From what I saw during the famine however,—and I often counted the aged, cripples, &c., on village-relief,—I should say that the percentage of those usually dependent upon the charity of others, and mendicants, is upon

Mr. Price—continued.

an average about ten. As soon as famine, as such, assumes a definite form, there is, in my experience, a tendency, and a very natural one, amongst the poor classes to get rid of the task of supporting useless relatives. The consequence was that the moment that the State or charitable private individuals step in, every infirm, old, crippled, or otherwise incapacitated person was turned off by his former supporters. I have found very many cases of the parents of, what would be, in ordinary years, fairly well-to-do cultivators, who had been sent into poor-houses by their children, to there await better times. I have frequently sent for the sons of respectable old people whom I found on village-relief, and have generally been answered to the following effect: "I have a wife and four or five young children, there has been no rain, and the crops have failed. It is as much as we can do to keep ourselves and children alive. I acknowledge that I ought to maintain my father, and I will do so as soon as times mend a little; if you turn him off now, he will certainly die, and some of us will probably do so too." In other instances I was told by the sons, &c., that they did not see why, as they were starving themselves, they should maintain their parents when Government would do it. Charity as such lasts as long as the people have the means. I knew of cases where rich ryots fed the poor all through the famine.

Mr. Longley.

Indigent or infirm persons unable to earn their livelihood are (among better classes) generally dependent on their richer relatives, who as a rule do not forsake them in times of scarcity. Those who have no such well-to-do relations become claimants for State relief. Among the poorer classes the aged and infirm are in ordinary times protected by their relations until distress sets in, when, owing to the inability of the latter to earn enough for their own support, the former become the objects of *State relief*.

Mendicants ordinarily live on alms which are given by natives of all classes, but these alms are withheld, or are given on a very limited scale, in times of distress. The consequence is that most of this class of mendicants then look to *State aid*.

In the Census returns of 1871 the number of male population of this class (mendicants) is given as 5,169, whose females and children according to the district ratio would be as follows:—

Females	..	..	..	..	..	..	..	5,253
Children	..	..	..	..	..	..	..	5,000
								<hr/>
Total	..							10,253
								<hr/>
Grand total including males	..							15,422
								<hr/>

The number of infirm, *i.e.*, deaf, dumb, insane, &c., is entered in the above returns as 9,990, but what portion of these are dependent on richer relations cannot be ascertained. There are no data on which to estimate the number of the poor depending on richer relations.

Mr. Stokes.

The proportion of poor and infirm persons supported by their richer relations and friends or caste-fellows and of habitual mendicants, but who become claimants of State relief when scarcity or famine arises, is about .0825 per cent. of the whole population. This figure is arrived at by taking the number of persons on State relief on the 23rd February 1878, *viz.*, 1870, as such against a total population of 2,266,615 according to Census of 1871. The figure of the 23rd February was taken as it was the latest stage of famine, when it could be expected that only those that answer the description given

Mr. Stokes—continued.

in the question would remain on State relief. But from experience it would appear that habitual beggars and others described scarcely resorted to State relief.

Mr. Whiteside.

I am of opinion that about 1 per cent. of the population of a large town are habitual mendicants, and about 4 per cent. poor and infirm. Charity is regarded by the native community as the greatest of virtues, and its practice is maintained even to a scanty extent to a very advanced stage of a period of scarcity. Not until it is thoroughly borne in upon men's minds that the famine is really serious, and the importance of self-preservation is forced upon them by stress of circumstances, do the springs of private charity completely dry up. When lately the season began to mend, and fresh grain began to come into the markets, I noticed with surprise and pleasure as soon as prices fell how the practise of charity began to revive, and I saw beggars receiving small handfuls of grain here and there.

Mr. Goodrich.

No materials exist for making anything better than a vague conjecture. The results of actual experience in the south are before the commission. I should endeavour to obtain them as the best evidence if I had to make an estimate.

Mendicants exist in no great numbers, but no large village is without a few of the class. The Census Return of unproductive males gave 3,395; nearly all of these are habitual mendicants, many of whom have families. This enumeration does not account for the regular beggars whom every village contains and who, as I believe, form not less than 1 per cent. of the population. They are beggars from infirmity caused by age or disease. They have houses, and in many cases do a little work. It is the custom of the country to accept the task of maintaining such. They are in some cases sturdy knaves who could work if they would, but prefer to threaten annoyance unless relieved.

The village beggars are driven to wander when the prices of food treble. Many begin to wander as soon as those prices have doubled.

Mr. Horsfall.

The general opinion is that about 3 per cent. of the population are more or less dependent upon the support of their richer relatives or private charity. Private charity is very extensive; it is practised daily and without ostentation. It is difficult to prescribe an exact limit for the cessation of private charity: it is inculcated as a Divine obligation. Charity to poor and infirm relations does not cease until the means of self-support cease to the person hitherto protecting. The habitual mendicant does not hesitate to seek relief both by private and State charity. At no time can the springs of private charity be said to dry up except with the inability to bestow charity.

Mr. Grose.

I can give no useful information as to the proportions of the population who are mendicants, &c. According to the Census of 1871, the "unproductive class" in Nellore, which is explained at page 189 of the Census Report as consisting chiefly of mendicants, numbered 9,886, or 72 per cent. of the total population which is 1,376,811. Private charity diminishes, of course, from the first, for the poorest laborer is often here as elsewhere charitable. Still in the famine of 1876-77 decrease was not so obvious as to be forced upon my notice till the crisis of the famine came when the south-west monsoon of 1877 was failing.

Mr. Crole.

Between 3 and 4 per cent. of the population constitute the classes alluded to. Private charity dries up as famine becomes developed.

Mr. Martin.

Approximately, as far as I can ascertain, habitual mendicants are about 2·5 per thousand ; deformed, blind, and other persons physically incapable of work are 3·5 per thousand ; and old, infirm dependents of families 50 per thousand ; total, 56 per thousand, or 5·6 per cent. Private charity begins to fail to a certain extent the moment people become aware that the failure in the harvest is universal. It does not reach the extent of absolute refusal of food for some days, but what is given is given sparingly and grudgingly and ceases in a few days. Once prices have gone below 8 lb. of second-sort rice per rupee, it may be pretty confidently predicted that charity will begin to stint and will not last for a month in its entirety.

Mr. Austin.

I should estimate roughly that 1 per cent. of the population fall under this head. The springs of private charity begin to dry up as soon as it becomes evident that the period of scarcity is likely to be a long one, and when each individual begins to feel it time to think of himself.

Mr. Knox.

I should say that the number of those who from age or infirmity are unable to shift for themselves would be about 10 per cent. I do not include professional beggars, but I should not think that the number of these is large, and they need not be taken into account ; they are mostly able to work and, like others, would be forced to apply for relief when distress became severe.

All the large numbers of infirm persons would not however be on our hands at the commencement of distress, but only the infirm of the laboring classes and poorer cultivators. This number, though amounting to 10 or 12 per cent. of the total numbers in these classes, would not be more than about 1 per cent. of the entire population. It would not be until famine became so severe as to affect all classes composed of persons of only moderate means that the percentage would much increase. It would require half the population to be on our works to make it rise to 5 per cent.

Mr. Jones.

I believe those always supported by richer relations, friends, and caste-fellows, and habitual mendicants can scarcely fall less than 5 per cent. of the total population, at a rough estimate, and it is when distress becomes established as famine throughout the land that private charity almost ceases.

Mr. Soobien.

Approximately one-twentieth of the total population may be said to form the class of people indicated in this query. At the stage when people are drained of the surplus of their income and can ill-afford to spare money, &c., for the support of others than themselves owing to the prospect of the disappearance of the famine being remote, then the spring of private charity begins to dry up, and the class of people under reference who hitherto lived on other's income find it hard to eke out the means of their subsistence. This generally happens a few months after the appearance of the famine.

Seetharamiah.

The proportion of the class of people mentioned in this question to the total population may be approximately estimated at 6 per cent. This proportion is larger in the urban population, where the tendency

Seetharamiah—continued.

and necessity to depend upon others, is greater than in village agricultural societies, who are all self-protective, except those completely unfit for work by physical unfitness. Private charity begins to dry up when the prevailing high prices begin to press the givers hard. The agricultural classes, many of whom after a fair crop followed by a total failure would have left for them surplus grain for about three months, will continue their usual charity till the greater portion of their own stock is exhausted. During the earlier stages of distress the usual charity is not discontinued all at once. The discontinuance is only gradual, and would not be felt to any preceptible extent till numbers seeking gratuitous aid become overwhelming, when alone arises the inclination to stop the usual charity altogether.

Mr. Oldham.

The springs of private charity never dry up for poor and infirm persons who, in ordinary years, are supported by their richer relations, &c., and for habitual mendicants. These springs may contract, and do contract as prolonged distress tells upon the donors, but only fail altogether when the donors' means have totally failed—not in all cases of course, but there are always multitudes of such instances. I would venture to say that in a famine these classes (the poor, infirm, and habitual mendicants, &c.,) fare much better than the poor who are habitually self-supporting on little more than a subsistence wage.

Mr. Cook.

About 10 per cent. It would be very difficult to say exactly when private charity begins to dry up, as it all depends on the supporting individuals, the rapidity with which famine increases and prices rise. High caste people would no doubt hold on the longest as their pride forbids them to drive their relations on Government aid; low caste would soon give in. I say it would only be when their present stock is not sufficient to support themselves that they would give in, and this would be difficult to determine. I know of one man who has distributed charity all through the famine and is still doing so.

Captain Awdry.

The springs of private charity appeared to dry up entirely when the State took the duty of relief of distress on themselves. There was then a reaction, and those who, as heads of communities, were charitable at first, appeared in many cases to endeavour to obtain relief for themselves by sending their own dependents to conjee houses or relief works. As an instance of this I may quote the case of a large ryot who has the reputation of being charitable. I learnt at the time, on reliable authority, that his laborers (a kind of slaves) whom he habitually feeds with grain in return for their labor, were sent to Government works and received *grain* from him to live on, having at the same time to pay the *money* received by them to him. This was soon put a stop to.

Hurry Row.

In India private charity seldom dries up, but it does not go out of its doors to afford relief.

QUESTION 5.—It is obvious that if an accurate forecast of the condition of the people during the approaching season, following any more or less serious failure of the ordinary harvest, could be made by the District Officer, it would be of great utility; in what way could he make it, and on what data should his calculations be based? Suppose for instance that he estimates that half the average food-crop has been lost:

for the support of how many people does the balance that is saved suffice? How are the rest of the people to be fed? He must form an estimate of the food-stocks in the country and of the power of trade to bring in more. Supposing these two elements sufficient to supply what is wanted, there could be no famine of food. But there may be lack of money to purchase food; how is an estimate to be framed of the number of persons who would probably be able to purchase, and of the number who must be assisted by the State, either by employment which will bring them wages, or by food if they cannot work? These would consist mainly of the classes indicated in Questions 2, 3, 4, viz., the field-laborers, the urban poor, and infirm dependants or mendicants. What numbers approximately of these classes would you expect to have on your hands if the food-crops in your district failed to the extent of $\frac{1}{3}$, $\frac{1}{2}$, or $\frac{3}{4}$? and if this happened in two consecutive years?

Mr. Whiteside.

I have already observed that a district officer has available many returns and statistical reports from which he can form with great accuracy a forecast as to the state of the coming season in his own district, while the reports printed and circulated by Government in regard to the condition of adjacent districts place him in a position to calculate how far the state of the surrounding country is likely to affect his own district as regards prices, demands for grain for exportation, &c. But the calculation of the quantity of the stocks of grain actually in hand, and the length of time for which they will last for the support of the local community, is a far more difficult matter. All natives, and especially the agricultural class, are addicted to the hoarding of grain year by year. A prodigious share of the crops as they come off the ground are stored away in under-ground receptacles, the existence of which is jealously concealed and strenuously denied if inquired after. These stores of grain are kept intact, often for years at a time, and are gradually fallen back on when scarcity prevails, or when bazaar prices rise inconveniently. It is impossible to estimate even with approximate accuracy the total amount of these grain-stores, but of their existence in large numbers we have clear and unmistakable evidence afforded in the course of the famine, which has now prevailed in this district for upwards of two years. According to the last Census the population of North Arcot was 2,015,000 persons, and during the famine it was calculated that 1,500 tons of grain per diem would be required to feed those people. But when the famine was at its highest pitch of severity, the largest quantity of grain imported by rail in any one week never exceeded 1,000 tons. It was thus clear that the vast bulk of the population was being regularly supported by grain actually present in the district. The grain dealers' supplies in the large towns consisted chiefly of grain imported by rail, but the great mass of the agrarian population throughout the past two years have been eating their own grain. This is further shown by the fact that when the late raggy harvest was known to be a fine one, and heavy crops were being reaped, large quantities of old raggy were suddenly thrown into the market in various places by people who must have kept them in store throughout the last two years in spite of the enormous prices that could have been realised had they chosen to sell earlier. This district is so well supplied by railways, and there is such an excellent system of road communication from the various railway stations, that no difficulty was experienced throughout the famine in getting stocks of imported grain from the railway stations to the chief market towns. There was, therefore, never a famine of food in the true sense of the word. The secret grain-stocks coupled with the weekly importations by rail amply supplied for the needs of the people. But it was impossible to calculate even with approximate

Mr. Whiteside—continued.

accuracy the amount of grain stored away in the villages, for such accumulation had been made gradually and secretly for years, and though the divisional officers were certain that they existed, the owners would not for a moment admit the fact, partly from a fear lest they should be marked down for a grain dacoity at an early date, and partly lest the Government officials should refuse them State aid as the famine went on.

The real difficulty was lack of money to purchase food at existing high rates. These high prices were maintained throughout the past two years with singular uniformity, the result, of course, of the regular supplies received by rail and the admirable facility with which those stocks were carried from the railway to the chief market towns and villages in each taluk, and the numbers of persons who required work from the State to enable them to earn wages for the purchase of grain, or who in other respects became dependent upon the State for their support, were as follow:—

			No.	Per-centage of Population.	
Relief Works	Adults ..	65,846	3·31
			Children ..	9,356	*46
			Total ..	75,202	3·77
Gratuitous relief-camps and village-reliefs	Adults ..	78,848	3·91
			Children ..	78,898	3·90
			Total ..	157,746	7·81
Grand Total.			232,948	11·58	

These numbers corresponded in a very remarkable degree with a calculation that I made when Sir Richard Temple first visited my district in March 1877; and in future times of scarcity I expect they will not be exceeded, the condition of the district as regards roads and railways remaining as it is now.

Mr. Longley.

I admit that, if an accurate forecast should be made, it would be of great utility, but I am of opinion that this is not possible for the following reasons:—

- (1.) If the distress is widespread embracing, as in the present famine, ten or eleven districts, or in foreign countries, Burmah for instance, which draws away food-stocks from this country, the condition of the people can by no means be presaged considering the facilities now afforded for exportation, *i.e.*, sea-boards, roads, and railways. As an instance, I may say that the stress of the present famine would have been felt later on in Salem if there had been no exports to Maisur in the earlier stages of distress.
- (2.) Another element which lowers the value of the forecast is that the mere fact that the estimated stock in the country can feed so many thousands of people for so many days is no index to the quantity required *to be supplemented*, for, when distress commences and prospects appear doubtful, a great number of those agriculturists and proprietors of land with whom the stocks remain withhold contributing to the general market either in hopes of getting still higher prices or in view to guard themselves against the contingency of a greater scarcity, while merchants export all the grain they can secure to places where higher prices rule.
- (3.) It must not be forgotten that with distress people possessed of a limited supply of food begin to reduce their own rations. This reduction is in proportion to each person's means or other circum-

Mr. Longley—continued.

stances, so that a forecast based on the assumption, say, that a male or female of a given age would consume so much in ordinary times would fail to be of much practical value.

- (4.) But, supposing that the above elements are absent, there is still a difficulty in making an estimate; for, though the productive power of the country can be estimated, there are no reliable data on which to calculate the existing stocks in the country, as we have no information at present of the actual quantity of normal exportations and importations.
- (5.) Assuming the distress to be local, the data for a forecast are (1) the census returns which give particulars as to age, number, sex, &c., of the total population as divided into several castes and classes, and (2) the cultivation returns of the district. Ascertaining the average quantity of food consumed by people of different ages, sexes, and classes, an approximate estimate of the total quantity of food required is arrived at by the help of the census returns. The cultivation returns give us the area cultivated with different crops in Government villages. The average yield per acre of each crop being determined, the total average production of the district may be assumed. It should be noted here that there are no accounts either with Government officers or with Zemindars to show the *cultivation* in the villages belonging to the latter. In fact, Zemindars do not require such accounts, as they collect assessment on the whole holding irrespective of the circumstances under which lands are left waste. This also contributes to lessen the value of the forecast, though for the purpose of this calculation the proportion of cultivation to waste in Zemindaris may be assumed to be in the same ratio as in Government villages. The following is an estimate based on the normal consumption of the population of the food available for the Salem District (*vide* accompanying statement):—

	Acres cultivated.	Average Yield per Acre. Madras Measure.	Total Yield. Madras Measure.
Yield in years preceding the failure. { Dry food grains. 1,422,393		350	4,97,837,550
{ Wet crops 114,427		400	45,770,800
Total ..	1,536,820	..	54,36,08,350
Consumption in the year according to the accompanying statement .. .. .	..	..	3,67,541,130
Balance to the credit of the year in which the failure occurs..			1,76,067,220
Production in a year of half yield .. .. .	..	..	2,76,804,175
Add the surplus of previous year on the assumption, say, that all above a year's surplus is disposed of .. .. .	..	..	1,76,067,220
Total ..			4,52,871,395
Average quantity required for a day throughout the district..			10,06,962
Number of days for which the above quantity would suffice ..			450

N.B.—Population 1,966,995.

The total yield of the district in the year in which the failure occurred together with the surplus of previous years in stock is sufficient to sustain the people throughout the year; but, as the stock is not distributed equally among all classes and peoples, importations would be required to feed that portion who, if the market is not supplied by stock-keepers, are unable to purchase food-grain.

The census returns furnish information as to classes who would be able to purchase in times of distress, "occupation" being taken as a standard for determining the same.

Mr. Longley—continued.

Persons of the following occupations may be classed as “able to purchase” :—

Government Service.
Military.
Learned Professions.
Traders.
Conveyers.
Domestic Personal Service.
Cultivators of large holdings.
Industries—

N.B.—These classes include holders of stocks as well as those who depend upon the market.

Food.
Metals.
Construction.
Books.
Indefinite and Non-productive—
Property.
Unproductive.
Others.

The following classes may be taken as those unable to purchase when high prices prevail :—

Professions—
Minor Professions.

Agricultural—
Small Cultivators.

Industrial—
Dresses.
Household goods,
Combustibles.
Laborers.

These are the classes who require to be relieved by the State. As the number of the adult male population of the several classes is given in the census returns, an estimate can be formed of the numbers of their women and children on the basis of the district ratio. But it must be remembered that all the classes above mentioned will not come in for State aid at once, for, as above stated, they first reduce their rations, and for a considerable period stick to their homes and villages. The numbers, therefore, that will have to be relieved will increase as the distress becomes intense, so that no estimate of them can be formed.

The classes to be relieved are stated above. A great number of mendicants in Southern India do not go to camps or works.

I do not expect any numbers when the failure is one-third or half in the first year, but when it fails three-fourths, then the ryots of small holdings begin to dispose of their live stock, &c. In the absence of necessary materials, and considering the difficulties above indicated, I cannot form an approximate estimate of the numbers that will have to be relieved by the State at the different degrees of failure mentioned in the question, but merely enter the numbers (according to the Census of 1871) which will have to be relieved in the height of a famine in the succeeding years :—

	Men.	Women.	Children.
Minor Professions	7,722	7,799	9,778
Dresses	40,056	40,456	50,722
Household goods	4,904	14,953	6,209
Combustibles	424	428	536
Laborers	118,206	119,388	149,684
Sixty per cent. of cultivators ..	201,792	203,814	255,534
	373,104	376,838	472,663
Total ..	12,22,605		

Mr. J. G. Horsfall.

The population is now pretty accurately known from our Census returns. We get returns also showing the extent of land sown with food-grains and approximately the quantity of the produce, so that there would be no great difficulty in calculating what proportion of the population could be fed upon the produce of any single year; but other ingredients step in to make the calculation anything but a simple or certain one. The result of previous harvests, the stock of grain in hand, are most important; the resources of the district and its production of other than food-produce are important disturbing elements. Then again statistics as to the food-grains and other produce in zemindaris are not forthcoming. This needs correction, if necessary, by legislative enactment. The condition of other districts and other markets has also to be taken into consideration, regulating, as they do, the probability of exports and imports, for the merchant will not be deterred from exporting food-grains from a district already in famine if other markets are more favorable. Still the primary considerations are the population to be fed and the amount of food-grain produced, and with these as his data, with due allowance for other disturbing elements, a pretty accurate estimate may be formed as to the proportion of population likely to be dependent upon relief during the next few months of any year. Our Census returns at present supply a sufficiently accurate estimate of population. Our statistical returns are not by any means so accurate, and are wanting altogether for zemindari lands which are in this district at any rate by no means an unimportant factor. The estimated yield in food-grains of a fair year in this district excluding zemindari lands is 450,000, the population of the same being about 1,150,000, the quantity required for consumption being

* *N.B.*—This cannot be right if the candies were intended to denote the usual measure of weight. Tons would be near the mark.

estimated at 300,000 candies,* thus giving a very large surplus to store and export. The produce and population of zemindari tracts may be assumed to bear the same proportion, thus giving estimated produce of food-grains at 560,000 candies, population 1,450,000 with a consumption of 380,000 candies, leaving a surplus of 180,000. Thus half an average crop would leave 100,000 candies to be provided from stored grain or imports; that is, over 300,000 would be without food. These must be fed by imported grain and by grain already stored.

A failure of one-third crop only would merely reduce the amount otherwise available for exportation, but would not necessitate any relief measures at the hands of the State.

It is questionable whether the failure of one-half the crop would even necessitate State interference. The crops in this district for the year 1877-78 were estimated at little more than half an average crop, and yet no relief has been administered since the commencement of the year. Prices have pressed very hardly upon all three classes, but actual State assistance has not been found absolutely necessary.

The loss of three-quarters of the crop would leave sufficient produce to meet the wants of one-third of the population only. Two-thirds of the population would be dependent in such case upon stored grain and importation. I should expect 5 per cent. of the population to come upon relief in such a case.

For the reasons stated above the loss of one-third crop in two consecutive years would not entail any State relief.

For a second year with only half a crop the proportion to be relieved would not exceed two per centum of population. As a matter of fact, after two years with only half the average yield, we have now in this district no relief measures or State aid whatever.

Mr. J. G. Horsfall—continued.

In the case of three-quarter failure of crops in two successive years twenty per centum would probably require Government relief.

Mr. C. S. Crole.

It may safely be assumed that there is always in stock with the ryots food sufficient for the whole district for eighteen months, and that the numbers requiring to purchase food in an extreme case would be 400,000. Half an average crop would probably suffice for bare subsistence for the whole population of 914,432 inhabitants of Kurnool District.

The numbers likely to fall on the hands of Government might be expected to be—

- (1) if the crop failed by one-third in two consecutive years, none ;
- (2) if it failed by half, none in the first year and 150,000 in the second year ;
- (3) if it failed by three-fourths, first year 25,000, second year 350,000.

Mr. Pennington.

I have no confidence whatever in estimates of crops or estimates as to the extent to which crops have failed, nor in estimates of the number of people likely to come on relief. All such calculations are dependent on a vast number of considerations as to which any mere District Officer must be very much in the dark.

Mr. Price.

I should start by assuming that the population of the district consumed, on an average, $1\frac{1}{2}$ lb. of grain per diem, which, from frequent observation long before the famine, I believe to be a fairly correct estimate. I would then take the area of crop actually reaped in the preceding year and the area cultivated in the year up to date or the forecast, compare this with the cultivation at the corresponding period of the previous year, and so make some approximate estimate of the cultivation for the whole of the year under consideration. I should then calculate by taking the reported outturn of the previous season, and making such deductions for the difference so far observable in the two seasons, as appeared to me to be right, what the probable outturn would be, and, by putting this into pounds, would be able to estimate for how long the people of the district could be supported by the crop of the year for which the forecast was made, and how much grain in the way of stock might be taken to be in hand. In a district such as this it is with rare exceptions that any stock of more than a year's standing is kept on hand. In Cuddapah and Bellary, where much grain is buried, it is absolutely impossible for any reliable estimate of what stock of grain is really stored to be made. The sequel of the famine showed clearly enough that, in places where the most experienced native officials stated the opinion that there was no grain whatever, large quantities were hoarded. I see no other way than that suggested of framing a forecast ; at the best no officer, even one intimately acquainted with his district, can make anything but a very rough calculation. If he allows, on the unfavorable side, a liberal margin for error, he will place himself, though he may not be very accurate, on the safe side.

Take that the average annual crop of food-grains of all kinds in this district is 279,812 tons (which is something about the mark). Half of this would be 139,906 tons. The population as per census of 1871 was 940,747. Allow a daily average consumption of $1\frac{1}{2}$ lb. per head. This would give 222 as the number of days for which the population of the district could be supplied. The difference would

Mr. Price—continued.

have to be made up by importation. The estimate of the number of persons who would probably be able to purchase food would entirely depend upon whether the failure of crop was for the first or second time; a failure of one-third would for the first year cause no appreciable indication of pressure, excepting perhaps that prices might rise a little; a failure of half would cause a demand for employment towards the close of the season, which ought to be met easily enough by the ordinary work of the district; and a failure of three-fourths would probably create a necessity for small special works, but not relief at home. As to what the percentage of the population which would thus come upon relief would be I can form no estimate. I would not have touched on the subject at all had I not seen in 1866 the case of a failure of three-fourths crop in the Salem District. There was then certainly no visible distress in villages, but the people clamoured much for work. Some comparatively small sums were spent upon new roads, but what the proportion of people who came upon the works was I have no means of stating. I recollect that they were in the main agricultural laborers. A failure of one-third for a second year would not, in my opinion, throw any appreciable number of persons unable to buy food on the hands of the State; a failure of half would call for assistance on the part of the State to 10 per cent., and of three-fourths crop of something like 20 to 25 per cent. The figures of relief operations should, in my opinion, most decidedly not be taken as the basis of any calculation as to how many persons out of the population of any particular district may, under certain known conditions, be expected to come upon the hands of the State in the event of the failure of crops. I make this remark in reference to my personal experiences in the districts of Bellary, Cuddapah, and Chingleput. My reason for it is that I am aware that very many individuals were admitted to relief of all kinds who ought not to have been.

Mr. Webster.

Distress was at its worst about September 1877, and Government then had on its hands 241,763 persons. This number included not only the field-laborers, urban poor, and mendicants, but petty landholders, weavers, and artisans, and I believe that even this number did not include all who really required relief, for the relief-works were not well understood and were unpopular. It is not possible to frame an accurate estimate of the numbers likely to require relief from the returns of gratuitous relief given before closed camps were established, for the open relief-houses afforded no security that persons relieved were really in need of relief. I will therefore, in making a calculation, deduct 10 per cent. from the number in gratuitous relief in the feeding-houses, which may be taken to represent the numbers improperly obtaining relief. There was no famine of food in this district during the late distress, that is to say, grain was always procurable for money. I do not know whether, in the event of there being no scarcity of money, the imports of grain would have been sufficient; probably they would not at first, as the railway was badly off for locomotives, but, as soon as the number of locomotives was increased, the imports would have increased with the demand. The demand was, however, kept down by the inability of the people to purchase; and therefore, as a matter of fact, there was no food famine. I will therefore assume that all who were on relief at the height of the famine (excluding the 10 per cent. deduction) were unable to purchase food, and to this number I will add the estimated decrease in the population either by death or emigration as shown by the trial census or 11 per cent., which amounts to 191,730.

Mr. Webster—continued.

To this latter number must be added the estimated increase of the population since the Census of 1871 at 1 per cent. per annum for, say, seven years, which gives 122,010. The total decrease as per Census is therefore 313,740. The calculation will therefore be—

Number on works, September 1877	...	...	...	26,867
Nine-tenths number on gratuitous relief ..	...	...	...	167,931
Money-dole	...	...	...	28,307
Estimated decrease of population	...	...	...	313,740
Total	...	...	...	536,845

From this must be deducted the number of recorded deaths among the recipients of relief from the commencement of the famine to date or 18,530. The above calculation results in there being, in September 1877, 518,315 persons, or about 29 per cent. of the population unable to purchase grain. In October 1876 prices rose and distress commenced in November, and in January 1877 the numbers on relief-works were 28,460 and on gratuitous relief 58, or say 28,500. It is probable, however, that this number did not include all who were unable to purchase and who required relief. I will, however, confine myself to the actual figures, which gives 1·6 of the population. To this must be added those dependent on charity or 2·13, which gives 3·73 of the population as unable to purchase when the crops have failed one season to the extent of one-third. The 1877-78 crops failed to the extent of half. The number on relief in June 1878, when the season's crops had been harvested and prices had reached their maximum for the year, was 56,308; adding to this the estimated decrease of the population after deducting the recorded deaths, 295,210, gives a total of 351,518 persons, or 20·1 per cent. of the population, as unable to purchase grain in the current year. The following summary shows the result of the calculation :—

					Percentage of Population unable to purchase.
1875-76 loss of crops one-third	...	...	...	...	3·73
1876-77 do. three-fourths	..	...	...	...	29
1877-78 do. half	...	...	...	...	20·1

It is difficult to estimate the increase of destitution for successive years of equally short crops, for the increase would be far greater with a continuous heavy, than with a slight loss. For instance, if in 1876-77 the crops had again failed to the extent of one-third, the number requiring relief would probably not have doubled, while, had the 1877-78 crop failed to the same extent as the 1876-77 crop, instead of the percentage during the current year being 20·1, it would have been more than double that for 1876-77.

I cannot give the proportion of the classes mentioned in the question likely to require relief, because I have no means in the short time allowed of forming an estimate of their numbers.

Mr. Grose.

Generally Tahsildars can be trusted to estimate approximately the extent of crop reaped in any month and the quantity of grain thus obtained; but the amount of grain in stock when a famine begins is always a very doubtful question, and no estimate of it can be formed unless the exports and imports at the land frontier are recorded. This will be an expensive work, but it seems to me necessary. It is particularly desirable that the traffic on the canal should be known. It has been estimated that in the part of Nellore which is not under Zemindars the outturn of food-grain is 300,000 putties (or tons), the consumption 255,000, the amount required for seed-grain and gram given to cattle 15,000, and the surplus 30,000.

Mr. Grose—continued.

The only way of estimating the numbers who will come upon relief is by referring to previous experience. It is impossible to say what numbers will need relief after successive failures of crop to a particular extent, because this depends on the quantity of grain in stock, on the prices prevailing in one district compared with others, especially those on its frontiers, and on the consequent course of importation by land and sea.

Mr. Martin.

Most villages may be presumed to have undergone a survey more or less accurate, and the qualities of their soils are generally more or less ascertained.

In a district through which the Settlement Department has been, the first thing to do is to divide the range as nearly as possible into portions which have received good, bad, and indifferent rainfalls. Then get an account drawn out, showing the different areas under each particular soil in these various sub-divisions of the range.

The average return from each particular soil can also be ascertained from the Settlement Returns, and the question for the District Officer to determine from consultation with his subordinates and others, corrected by the evidence he gains from touring through the affected parts, will be—What has been the effect on the average return of grain where the rainfall has been either indifferent or bad?

In districts where there has been no settlement, it will not be possible to estimate the average produce so correctly, but a fairly correct idea of what it is for each particular soil might be recorded for each district according to the settlement calculations, it being assumed that land is of the class represented by its assessment.

Assuming that every District Officer has—as he ought to have—data for calculating the average crop of the different kinds of soil for each kind of grain, the District Officer ought to be able, with the aid of the cultivation returns, to compile a pretty accurate estimate of the actual average crop of each of the sub-divisions he makes of his range, and from observation and actual measurement he must calculate how much short of the average each part of the range is.

The sum total of the yield of the different ranges will be the total food crop of the district.

I append to this question the forecast report I made for the division in January 1877, in which I have given the data on which my calculations were based. If the failure of rainfall over a whole district was nearly equally distributed, I should say that a failure of one-third the average crop would only produce scarcity and not *famine*, and that in all probability no relief would be required; but if the rainfall is so distributed that the better parts get an average crop or nearly so, that the indifferent parts get one-third below the average, and the bad parts half below, there will be scarcity requiring relief in the first parts only. Similarly, with regard to the failure of half and three-fourths of the average crop, the seriously-affected area will vary with the distribution of the rainfall and the extent of the good and bad parts; also if there are two consecutive years of famine, one-third failure may be followed by half or three-fourths, half similarly by one-third or three-fourths,—in fact, the number of combinations of circumstances are very great.

In this division I should say that a failure of one-third of the average crop even for two years would not produce a necessity for relief. If half the average failed, I should expect that relief would not be required if the failure was equally spread, and if the rainfall was sufficient to produce wild vegetables and to prevent the fish and other animals which live in the water from dying, but if this failure

Mr. Martin—continued.

of half was not equally distributed, there would probably be distress in the part where the average production falls below half, and the distress would vary with the extent of failure; thus, in a tract inhabited by 100,000 people I should expect to have seven thousand on relief if the failure extended to three-fourths. If this distress was repeated for a second year, I should expect to have fifteen thousand of the people of this tract on my hands, and moreover people from both the tracts in which the failure was both half and less because of the high prices. The numbers would in all probability be 5 per cent. of the whole population of these last tracts.

If the failure was three-fourths the average, this would probably mean that there was no production at all in part of the tract, and that only a small part would have as much as half. I should expect to have 10 per cent. of the whole population on my hands before the first year was over, and if the distress was continued for a second year, I should not be surprised if the numbers went as high as 30 per cent. It is exceedingly unlikely in this division that a failure amounting to even half of the crop will be protracted, for any heavy rain, even though it may be sufficiently heavy to seriously damage the general harvest, must supply the wells, and the moment the wells are supplied, labor is available and a crop is put down. In a very bad season the crop raised comes to market in sixty days, and as the wells are capable of yielding a total weight of 33,000 tons, the relief from them will be very rapid and will speedily alter the ratio of the production to the average.

Mr. Austin.

The condition of the people when famine is imminent consequent on the failure of crops can be previously ascertained by the Divisional Officers from the monthly cultivation accounts, the rain register, reports on the state of crops, and the register of prices of grains received from the taluks. These when compared with the figures of the corresponding period of some previous (good) years will serve as data for making the calculations. The produce of the sub-division is almost equal to its wants with the usual stock. If one-half of the produce fails the balance that is saved (with the stock of the previous year) will suffice for nearly two-thirds of the population. Of the remainder, the number that will have to be supported by Government, will be roughly as follows:—

For the first year when the failure is—

$\frac{1}{2}$	0	of the population.
$\frac{1}{3}$	2	per cent.
$\frac{1}{4}$	5	„

For the second year when the failure on the previous year was

	—	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{3}{4}$
And this year the failure is—	$\frac{1}{2}$	0 per cent.	3	4
	$\frac{1}{3}$	3 „	5	8
	$\frac{3}{4}$	4 „	10	12

Prices considered with the rainfall and the actuals of the past harvests will give as good a forecast as the most elaborate one that could be imagined. The Cuddapah ordinary rainfall is from April to September 22 inches. October to December $10\frac{1}{2}$ inches. In 1876 seven inches fell in the former period, and only half an inch in the latter.

Mr. Austin—continued.

In my opinion there was a total failure of the great cholam crop of 1876-77 in Jammulamadugu, with a partial failure of the smaller and less-important September crop, and this brought almost the whole of the field laborers and the artisan and inferior classes on the hands of the State by the following August; but things were nearly as bad in June and July, prices having risen still more in those months as the rain held off. Another element that might vitiate calculations is the extent of irrigation that goes on from wells during a famine: about three crops were raised in 1877 from wells in the Pulivendala Taluk and in a small portion of Jammulamadugu and parts of Proddutur.

Mr. Knox.

At the commencement of any period of distress consequent on failure of harvest there would not in general be any lack of food; probably the stock in the country would be quite sufficient to supply all with food though at greatly enhanced prices. The chief cause of distress would be the inability of the poor to procure the means to buy food owing to there being little or no work for them.

As famine increased and the area affected became larger, it would no doubt be very necessary for every District Officer to keep himself informed, by careful inquiries made in every village, of the stock of grain in the district and the quantities imported; but such inquiry would not, I think, be absolutely necessary at the commencement. The chief thing to be considered then would be to what extent there was a demand for labor; this would be the test by which to judge of the degree of distress among the classes first affected by famine.

If there was no demand for labor we would have all the laboring classes almost immediately on our hands; if the demand was one-third, half, or three-fourths of what it usually is we would have roughly speaking two-thirds, half, and one-fourth of these classes to provide for. But it by no means follows because the crops failed to the extent of one-third, half, or three-fourths that therefore the demand for labor would be diminished in the same proportion. Although the grain failed there might be abundance of straw which would give labor for some time in cutting and stacking. It is I think impossible to lay down beforehand what proportion of the people would be on our hands in consequence of the failure of the crop to a given extent. The numbers on our hands would depend upon the state of the labor market, and how far that was affected by the bad harvest would have to be determined at the time on a consideration of all the circumstances. Special inquiries would have to be made as to the nature of the failure and as to whether there was still any work in the fields or any special work. It would also help in determining these points if inquiry was also made to ascertain how far vagrancy was rife, and whether there was much crime, and of what kind.

Mr. Soobien.

The approximate extent of the failure of the crop of food-grains and the number of people in the district to be fed should be ascertained. It should then be calculated whether the food-supply supplemented by the surplus, if any, of previous year's food stock and by imported food (if the district ordinarily imports food) would suffice for the population to be fed, and if it is found to be deficient then it may be assumed that the condition of things is not normal and that people will have mainly to live on imported food. Speaking of Madura Taluk its population is 231,796 who at an average rate of

Mr. Soobien—continued.

15 oz. of food-grains per diem would require approximately 35,410 tons per annum. Supposing the approximate quantity of the food-grains saved in the taluk to be 15,000 tons, and supposing the surplus of food stocks of previous years to be 3,000 tons (information on which head, however, is very difficult to be had with any degree of accuracy), and supposing that it ordinarily imports food to the extent of say 1,000 tons, the quantity of food supply thus arrived at is 19,000, which is insufficient to meet the requirements of the people, and the deficiency, viz., 16,000, must therefore be made up by adopting special measures for its importation. If half the average food crop has been lost, it should be calculated on the same way to find out for how many months the crops saved would suffice. The rest will have to be fed with imported food. The requisite quantity of food having been brought to the district, it is not possible to frame at the outset an estimate of the number of people who will be able to purchase food and of the number who lack money to purchase it. This can be ascertained accurately, I think, only from subsequent experience and the progress of events. As the famine progresses the numbers requiring relief will continue to increase, and those who were able to support themselves at the early stage with their private means will, as the famine advances, find their means exhausted and be compelled to have recourse to State relief. Perhaps the following method of calculation may be adopted in arriving at a rough estimate of the number that will require State aid:—One-fourth of the agricultural class and one-half of the laborers and 10 per cent. of the rest of the

* This is obviously a mistake; the proportion of the rest of the population to the adult males is about 2 to 1 and not two-thirds.

male adult population *plus* two-thirds* of the number thus arrived at being their females and male children under ten

years of age will, I think, represent roughly the number requiring State relief at the early stage of famine; two-fifths of this number will roughly represent people who are capable of work and will have to be relieved by providing labor and the rest those requiring State gratuitous relief. This is based on the assumption that in a family consisting of five members two will be capable of work and the rest

One-fourth of the agricultural class ..	= 11,740
Half of the laborers	= 7,250
Ten per cent. of the rest of the male adult population	= 2,169

being two children and an infirm dependent will be incapable of it. The figures noted in the margin have been arrived at by using the above method of calculation with reference to the population of the Madura Taluk taken from the Census book.

Add two-thirds of this number, being equivalent to their females and children	= 14,100
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Total ..	35,250
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Two-fifths of this number or persons capable of work	= 14,100
Three-fifths of this number or persons incapable of work	= 21,150

In the first as well as the second year, if the failure of crops is to the extent of one-

third, no State relief will be necessary. Equally will it be unnecessary, I think, in the first year if the failure of crops is to the extent of half as the people can manage to meet the distress by their own private means. In the second year of a failure of crops to the extent of half as well as in the first year when the failure is to the extent of three-fourths, the figures arrived at as stated before will represent the number who will require State aid. In the second year, if the failure is to the extent of three-fourths, the number will have to be trebled.

It must be stated, however, that in this district emigration to Ceylon, &c., is habitual and relieves the strain on the food-supply to some extent in all the years. The actual numbers that will require State relief will, therefore, in case of a demand for labor existing in